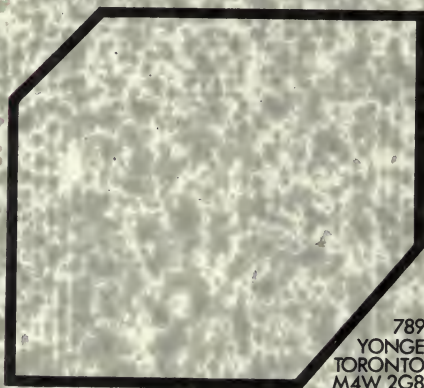


Shelf No. M630.5.C128

METROPOLITAN
TORONTO
LIBRARY



789
YONGE
TORONTO
M4W 2G8

METROPOLITAN

June 13 1902

THE
CANADIAN
HORTICULTURIST.

PUBLISHED BY
THE FRUIT GROWERS' ASSOCIATION
OF ONTARIO.

VOLUME VI.

D. W. BEADLE, EDITOR,

ST. CATHARINES, ONTARIO.

COPP, CLARK & CO.
PRINTERS, 67 & 69 COLBORNE STREET, TORONTO.

1883.

THE UNIVERSITY OF CHICAGO

LIBRARY OF THE UNIVERSITY OF CHICAGO

1891-1892

CHICAGO, ILL.

1891

THE UNIVERSITY OF CHICAGO

CHICAGO, ILL.

THE UNIVERSITY OF CHICAGO



INTRODUCED AND FOR SALE BY
J. T. LOVETT,
LITTLE SILVER, N. J.



THE
Canadian Horticulturist.

VOL. VI.]

JANUARY, 1883.

[No. 1.

THE HANSELL RASPBERRY.

THE COLOURED ILLUSTRATION which adorns this first number of the new year has been presented to our readers by Mr. J. T. Lovett, who is the introducer of this new fruit. It is quite impossible for the Editor to give any information concerning this new aspirant for public favour from personal acquaintance with the plants or the fruit, not yet having seen either. The following history and description is gathered from what Mr. Lovett publishes concerning this raspberry :

ITS HISTORY.—About eight years ago it was noticed growing among weeds and grass in a very unfavorable spot, where a raspberry not possessed of great constitutional vigor would have perished. After having been eaten down by a cow and barely escaped being dug up when the ground was cleared of rubbish, a branch struggled up into daylight sufficiently to bear fruit, which was so fine as to attract the attention of the owner, the late J. S. Hansell, who was an eminently successful fruit grower. He removed the plant to a more favorable location, and here its performance was so exceedingly fine that he set about increasing his stock of it as rapidly as possible, so that at

the time of his death he had ten acres of it growing.

DESCRIPTION.—It ripens very early, fully ten days in advance of the Brandywine growing beside it with the same treatment. It also invariably ripens its entire crop in a short space of time, about three weeks, and is wholly gone when the Cuthbert is at its height. The berry is medium to large, averaging larger than Brandywine and nearly as large as Cuthbert ; the color is of the brightest crimson, and the firmness equalling that best of all shipping red raspberries, Brandywine. The quality is *best*, being notably rich and refreshing, and the odor delightfully agreeable. The canes are vigorous, productive and entirely hardy, having never been injured either by the heat of summer or cold of winter, and is believed by Mr. Lovett to be as hardy as the iron-clad Turner. It has been fruited on a liberal scale on the Hansell place and sent to market, commanding a high price on account of its earliness and quality, and proved to be pecuniarily so profitable that with the sole object of fruit in view, the owner has extended his plantation of it to its present extent of more than ten acres. Such is Mr. Lovett's

high appreciation of this berry that he concludes his account of it by saying, that "the Hansell is the most desirable and valuable raspberry in existence."

This is certainly very high praise indeed from one who is well acquainted with the Cuthbert, which has been winning golden opinions from all cultivators of the raspberry, and rapidly taking the front rank as the best and most valuable red raspberry for market purposes. The ground, however, of the high position which he assigns to the Hansell is, that while possessing excellence of flavor and firmness to endure handling, it ripens so much earlier that it leads the market in price, and thus secures to the grower a larger pecuniary return than can be obtained from the excellent but later ripening Cuthbert.

However, plants of the Hansell are now in the market, and our growers of small fruits will not be slow to test its adaptation to the climate of Ontario. In a very short time its merits will have been put to the test in a very different climate from that of New Jersey and under conditions very different from those of the place of its origin. If it maintains the character given it by Mr. Lovett, our readers will have reason to thank him for introducing it to their attention.

WINTER RADISHES.—Winter Radishes should be sown during August. The *California Mammoth White Winter Radish* is the best variety. It is of good, mild flavor, and may be kept in good condition all winter in a cool cellar, if covered with sand. As with all Radishes, quality depends largely upon quick growth.—*American Garden.*

SOME OF THE NEW FRUITS.

Mr. R. H. Haines, of Moorestown, New Jersey, writing to the *National Farmer* about some of the fruits of comparatively recent introduction, says of the **JEFFERSON GRAPE** that it pleases him the most in the line of new red grapes; that it is fine-looking, large, of a pleasant flavor, and of a certain crispness of berry and distinctness of taste that makes it a pleasure to eat it; and that it ripens late enough to admit of its being kept in fine condition until January or February.

THE VERGENNES, he says, is also a fine red grape, hardy of vine, and ripening much earlier than the Jefferson.

BRUNTON'S EARLY BLACKBERRY is mentioned as attracting considerable attention, because it is one of the very earliest of the blackberries, ripening considerably in advance of Wilson's Early, and is proving very profitable in some sections on account of its earliness. The **EARLY HARVEST BLACKBERRY** is also becoming a favorite for earliness; but the **TEXAS RED HYBRID**, he thinks, is attracting more notice than all the others on account of the novelty of its color, it being a red blackberry and of fine eating qualities, and the berry being more nearly free from large seeds than any known blackberry; while the plants are estimated to yield nearly one-half more fruit than those of other blackberries. His plants have made a vigorous and healthy growth, and the fruit ripens so much earlier than the Wilson's Early that he thinks it may prove quite profitable in market if the plants are set out in sufficient quantity.

THE CHAMPION QUINCE ripens very late, yet most persons, he says, will consider this an advantage, because it will not come in competition with the Orange Quince, and will keep until January and February. It is very large and showy and of excellent quality for

cooking, while the trees are often loaded down with fruit when only two or three years planted, while other sorts of the same age have not a single specimen.

The KIEFFER'S HYBRID PEAR, he adds, is a greater favorite than ever, now that people are learning that the trees are blight-proof, and that its large and high-colored fruit sells at such handsome prices.

We note on this point of being blight-proof that Mr. Thomas Meehan says that instances have occurred where the tree has suffered severely from the genuine fire-blight, so that it is hardly safe to say that the trees are wholly proof against the fire-blight, though they may be less subject to this sore malady of the pear than many other varieties. If it shall prove to be no more subject to this disease than the well-known Seckel, Duchess d'Angouleme, or Doctor Reeder, it will be an acquisition in this particular. It is no doubt a fact that large orchards of this pear have been planted, and that some of them are coming into bearing, and that the fruit canning establishments eagerly buy up this fruit for canning purposes, because of its handsome appearance when canned and its peculiar Quince-like flavor.

Mr. Charles Downing, the well-known American pomologist, met with a serious accident on the 9th of November last in the City of New York, by which two of his ribs were broken. He is eighty-one years old, and it is feared that permanent ill effects may result, though hopes are entertained that it will not prove fatal. Every reader of these pages, will, we are confident, feel as though a much esteemed personal friend had been prostrated by this accident, and will sympathize deeply with this veteran worker in the field of pomology who has done so much for our favourite science.

SPECIAL FERTILIZERS FOR MELONS.

Dr. Sturtevant says that in growing melons, it seems well to add a handful of sulphate of potash, or several handfuls of wood ashes, to each hill. The effect seems to improve greatly the quality of the fruit grown, and if his experience is sufficient to generalize from, he would say that the addition of potash in excess to the soil upon which the melon is grown will add an excellent quality to the fruit.

PEACHES FOR MARKET.

Mr. P. M. Augur writes to the *Rural New Yorker* that he has been visiting the Delaware Peach Orchards, and mentions trees whose girth was from 36 to 44 inches, with proportionate heads, loaded with beautiful fruit. He says that most of the very early varieties rotted badly, still those who had good Alexanders got from two to three dollars per basket when they reached market in good order. Hale's Early also rotted badly, and Early Rivers rotted, while Early Beatrice were too small. The best kinds this year were Mountain Rose, Crawford's Early, Crawford's Late, Old Mixon Free, Reeve's Favourite, Moore's Favourite, Ward's Late, Stump the World and Smock.

He says that the Shakers at Enfield, Connecticut, last year thinned their Early Crawford's so that one hundred and forty peaches filled a bushel and sold them at their nearest market for eight dollars per bushel, and adds, "let all remember that fancy fruit brings fancy prices; it is the poor article that begs a market." The Mountain Rose takes the place of the Early York now; the Old Mixon Free is regarded as having many good qualities, and can be raised probably more cheaply than almost any other peach, and is excellent for canning, only that the fashion now

runs to yellow-fleshed peaches, hence Reeve's Favourite, Crawford's Late and Smock take the first places for canning.

While this may be true of canning, your Editor is credibly informed that for drying the white-fleshed peaches are all the rage, and that the drying establishments pay more for white peaches than for the yellow.

HOW TO DESTROY THE CABBAGE WORM.

A correspondent of the *Fruit Recorder* writing from Port Huron, Michigan, says that he commenced a series of experiments for the purpose of discovering something that would kill the worms and yet not be poisonous to human beings, and finally found that a solution of common alum made by dissolving one pound of alum in three gallons of rain water would kill the worms.

His mode of proceeding was to dissolve the alum in a small quantity of water by heating the water, and then add sufficient water to make the whole three gallons. When this was cold he put it into a common watering pot having a rose spout, and sprinkled his cabbage and cauliflower plants, keeping up this sprinkling as long as any of the insects were about, from the time that the white butterfly began to lay her eggs. He says that he watered them almost every evening, and thus kept his cabbage and cauliflower perfectly clean.

He also tried the alum solution on his currant bushes and with equally successful results, and recommends it for washing the trunks of young fruit trees, for the reason that it is a cheap, effectual and non-poisonous insecticide, acting instantaneously on the worm or caterpillar by means of its astringency and so contracting their tissues that they cannot breathe.

If any of the readers of the *Canadian*

Horticulturist should give this simple method a trial they will confer a favor on others by giving the results of their experience.

GRAPES UNDER GLASS.

It is not so difficult a matter to grow grapes under glass as many seem to imagine. The writer recently visited the cold grapery of S. D. Woodruff, Esq., St. Catharines, where the grapes were yet hanging on the vines in great profusion, beautifully ripened. Besides the splendid bunches of White Syrian and Black Hamburg, so frequently to be found in such houses, were some fine clusters of Canon Hall Muscat, the first that we have ever seen growing in Ontario. These grapes are all grown under Mr. Woodruff's personal supervision, without the intervention of a professional gardener; and the question naturally arises, why is it that there are so few gentlemen who undertake the culture of grapes under glass. It seems to be the general opinion that no one can grow these grapes but a professional; this is evidently not the case, as Mr. Woodruff has so abundantly demonstrated. A little application on the part of any gentleman to this matter will enable him to give such directions to his man-of-all-work as will result in a fine supply of these delicious grapes.

WINTERING CABBAGE.—We know of no better way to preserve cabbages through the winter than to plant or set them up in rows as they grow—that is, with the roots down—fill in with soil pretty freely, then make a covering by planting two posts where there is a fence to rest on, or four where there is not, allowing for a pitch to carry off the water; lay bean poles opposite the way of the pitch and cover with corn-fodder or straw or boards. In using through the winter avoid as much as possible the sun side and close up again. We have not found setting the cabbage upside down in the rows, as some do, of any advantage.—*Rural New Yorker.*

CORRESPONDENCE.

FRUIT TREES IN ALGOMA.

MR. EDITOR,—I am unable to give you any news of interest as to our future prospects for fruit-growing in this part of Ontario, as I planted a hundred fine apple trees the spring before last, and they were all winter-killed last winter, except three Hyslop and three Transcendant Crabs; and these six trees afford me encouragement to try again, as they have made a good growth this summer. Amongst those that I lost were, twenty Duchess of Oldenburg, ten Alexander, ten Snow, ten Red Astracans, and ten Russets. I had great confidence in these varieties standing our winter; and now they are standing examples to my other half-hardy favorites, which, of course, perished with them. But I have great pleasure in informing you and friend J. H. Cumming, of St. Hilaire, P. Q., that the Wealthy apple I received from the Association last spring, after being almost dried up in the mail-bags from the long delay in getting here, made a fair growth, stood the winter well, and has made three feet of growth this summer; and my hope is that it will come out all right in the spring.

Yours with respect,

W. WARNOCK.

Blind River, 11th Nov., 1882.

MR. EDITOR,—Enclosed please find my subscription for 1883 of one dollar. You will please send at distribution one of the Worden Grape vines, as I intend the planting of vines, and see if we cannot have improved grapes to grow here. There are some Concord and a few other sorts growing in the older settled parts of this Island. I think I can get these new hardy kinds to do as well with good care. The vine of the Moore's Early, received a few weeks ago, is looking well; but I

will know by spring how it will stand the winter.

We are having very open weather, thunder and lightning twice during the past week. I suppose this indicates open weather for some time yet; so the old settlers say.

My crops this season have been, for spring and fall wheat and rye, very good; barley has not been good in our part; oats only an average crop; potatoes only half a crop, on account of the bugs, and we could not get Paris green in time to save them; but I intend having a supply in time for next season.

Yours, with respect,

JAS. C. COOPER.

St. Joseph Island, Nov. 13, 1882.

DO BEES INJURE GRAPES?

Seeing an article from the pen of Mr. Taylor, in November *Horticulturist*, on paper bags, grapes and bees, I thought said article certainly called for a reply. Mr. Taylor states that certain interested parties contend that bees do not puncture grapes, while he along with Hon. J. C. Rykert and other horticultural friends have actually seen them do it. Now, with all deference to these gentlemen, I must beg leave to differ with them. Whether I may be considered an interested party or not, I may simply state that I have a very fine collection of the finest varieties of grapes, also keep a number of colonies of bees, not for the profits they bring but from the pleasure they afford, mentally and physically, both to myself and family. I have kept from four to thirty colonies of bees for several years in the same garden as the grapes grow, and I have never lost a single bunch of grapes by bees. I have seen bees, wasps and flies all sucking the juices out of a bunch of grapes some of the berries of which had either cracked or been damaged by the cat-bird or oriole. The

oriole is a great enemy to grapes, as it just picks a hole in the berry and then leaves it, thus destroying all the berries on a vine in a few minutes. The bees quickly follow and take up the juices, but in this case are the bees not a benefit instead of an injury? Mr. Taylor is certainly misinformed as regards last winter being destructive on bees. On the contrary, it is rare to have bees come through a winter so strong and healthy. For proof see *Bee Journals*. Some time ago two bills were introduced in the California Legislature to do away with all bees, on account of puncturing and destroying grapes, but a careful examination and an extended debate proved that there was not a *single case* of bees puncturing grapes.

I may just state that I never had more bees and honey or a finer crop of grapes than this season. A desire to prevent others from falling into the same error, and also to prevent the innocent but industrious and useful bee from being blamed for some other guilty pest, must be my only excuse for asking you to insert the above in your valuable journal.

D. V. BEACOCK.

Brockville.

GLUCOSE HONEY.

Under the above heading, in the October number of the *Horticulturist*, page 239, will be found a short extract from an editorial in the *Boston Journal of Chemistry* for July, 1881: it concludes as follows:—Human ingenuity, it is stated, has reached the point of making honey and storing it in the comb without the intervention of the bee. By appropriate machinery a nice looking comb is made out of paraffine, and after the cells are filled with glucose syrup, this fictitious honey is warranted true white clover honey from Vermont.

It seems strange to us slow, easy going Canadians, that respectable Am-

erican journals should give circulation to such absurd and untruthful statements as the above. Dr. J. R. Nichols, the editor of the *Journal of Chemistry*, ought to have known the making of artificial comb-honey to be an impossibility; and if so, what excuse can be offered by him for giving circulation to a story which must of necessity very materially injure one of the most pleasant and profitable industries in the country, and in which many thousands of honest, respectable people are engaged?

Did he, like many others, assume the story to be true because it appeared in the respectable pages of the *Popular Science Monthly*? If so, he has probably seen his error before this, as the author of that article, in a letter to the *Bee Journal* in June last, after quoting from his own article the following sentence:—“In commercial honey which is entirely free from bee mediation, the comb is made from paraffine, and filled with pure glucose by appropriate machinery”—states that this sentence was meant for a “scientific pleasantry.” The author of this “scientific pleasantry” admits that he knew his fabrication was being published and accepted as a truth in nearly all the papers in the country, yet lacked the manhood to affirm it a joke until the *Bee Journal* exposed the falsity and absurdity of the article. I have purposely omitted giving the name of the author of this “scientific pleasantry,” as I do not wish to give him that which that class of “professors” so earnestly desire—a fine advertisement. T. B.

Lindsay, Nov., 1882.

THE COLORADO BEETLE.—A labourer working on the American steamer *Wisconsin*, at Liverpool, on Thursday, found a live Colorado beetle. Information was sent to the Lords of the Privy Council, who ordered the insect to be killed and sent to Whitehall, which was done.

CULTIVATION OF THE SUGAR BEET.

The quantity of seed required to the acre for the Sugar Beet would seem to be an insuperable objection to its cultivation as a financial enterprise, if the statement on page 238 of the *Canadian Horticulturist* is correct, for it says "about 10 tons of seed were used to the acre" at Coaticook, P. Q.

T. B.

Lindsay, Nov., 1882.

Thanks are due to our correspondent for calling attention to the above error. It should doubtless have read "10 lbs. of seed," though we have not now the article at hand from which the paragraph was taken to verify the correction.

EASTER BEURRE PEAR.

This pear does well here. The tree is a good grower and bearer. I have it planted for but five years, and it has borne three crops of pears. This year it bore a bushel and a half. I think that a most excellent crop for so young a tree. The quality is very good for the season when pears are scarce, but it is not as good as some of the fall pears, though a great deal better than some of them.

HEBA RAWLINGS.

Ravenswood, Ont.

SOME GRAPES THAT HAVE NOT SUCCEEDED.

The *Rural New Yorker* has an experimental station of its own, somewhere in New Jersey we believe, where the new and old fruits and other things are tried. We learn as much from failure as from success, and it is but right that the public should be informed of the failures, that they may judge whether it is wise for them to continue the experiment. We clip the following from the *Rural New Yorker* of Nov. 2th:—

After what seems a sufficient trial, we have this Fall dug up and thrown away

the following grape vines: Quassaie (Ricketts), too tender; El Dorado (Ricketts), mildews and rots; Highland (Ricketts), too late in five seasons out of six, and sour when it does ripen; Newburgh (Ricketts), too tender; Rogers' No. 1, Goethe, too late—mildews badly, both leaves and fruit; Eumelan, grapes fall off.

PREVENTABLE LOSSES.

I see harvested on one farm a moderate crop of corn and potatoes; just across the fence the yield is only about half as much, and just beyond it is a total failure. The land has every appearance of being equally fertile naturally. All have suffered from the drought, but not all alike. Here are certainly losses due to thoughtlessness and want of knowledge. It is supposable that each of these parties did nearly as well as their knowledge, training and energy permitted, yet the results are widely different, caused by the different *degree* of these elements possessed by each. If this be so, then to avoid the losses of the less successful farmer, his knowledge and land must approximate towards those of the more successful one. I have cited what I consider preventable losses of only two men, but there are thousands of just such men, and tens of thousands of just such cases, in every state. Who is to energize and instruct them? Who is to train and educate the 12,000,000 youth that now reside on the farm, so that such losses may not occur in the future? Who is to keep honored fathers abreast of the times—who were born in the beginning of the century, with limited opportunities for acquiring knowledge, and are hardly able to keep pace in their growth unassisted—with the improvements wrought by machinery, steam and chemistry? Twenty millions of men, women and children on the farm, all to a greater or less

degree desiring to be taught how to avoid the preventable losses and failures! Who is to do it? How is it to be done?—PROF. I. P. ROBERTS, in *The Journal of the American Agricultural Association*.

THE GLADIOLUS AS A FALL FLOWER.

The Gladiolus is one of the most beautiful and charming of all bulbous flowering plants, and should be far more extensively cultivated. As a late autumn flower, there is nothing to surpass it. They are of the easiest culture, and succeed in almost any variety of soil. I have not tried them in pure sand, but my poorest soil has given me as fine flowers and bulbs as I could desire. I usually plant them four or five inches deep, covering lightly, and after they have grown a few inches, hoe, drawing the earth to them, thus completing the covering. I find planting thus deep is a great aid in keeping them erect, and



GLADIOLUS.

enables one to dispense with the use of stakes, and as the new bulbs are formed on top of the old ones, they are sufficiently below the surface to obtain requisite moisture and avoid being checked in growth should the surface become dry.

Many persons fail to get the most satisfaction, by planting too early and all at one time. If planted at intervals of two weeks or so for two or three months, the flowering season is much extended, and the later plantings come into flower when the bulk of other flowers are past. I know of no flower that embraces so wide a range and

variety of color and shades, from the most intensely brilliant and dazzling to the softest and most delicate tints, with various blendings of the same. The plants will stand quite a severe frost, or several of them, without injury, and after their more tender companions that helped to make up the beauty of the flower garden and lawn have withered and faded, the charming Gladiolus still remains to cheer our eyes and gladden our hearts. Even when the weather has become so cold as to freeze the ground, any flower-stalks near the point of blooming, if cut and put in water in the house, will continue to develop and unfold their bloom for two or three weeks, furnishing a source of great admiration to every visitor, and by their cheerful presence a welcome and attractive feature to any household, long after their companions have "withered and gone."

After the plants have ceased flowering, and before the ground is frozen deep enough to injure the bulbs, they should be taken up, the tops removed and the young bulbs put in paper bags, boxes, or something similar, labeled if the varieties are named, and kept in a dry cellar. The price of bulbs is now so low that no one need be deterred from engaging in their culture, in a small way at least. It is not necessary to pay fifty cents to one or two dollars for a single bulb; such prices belong to new and scarce varieties or novelties, and are no index of their beauty. A dozen bulbs of mixed colors can be had for a dollar, and as many choice-named varieties for double the amount, so that for a small investment the owner of the humblest yard or garden may be able to realize, and say with equal truthfulness, as has been said of the Lily,

"That even Solomon in all his glory
Was not arrayed like one of these."

E. WILLIAMS, in *American Garden*.

STAYMAN'S EARLY BLACKBERRY.

Dr. Stayman writes to the *Fruit Recorder* that he has a blackberry earlier, more hardy and perfect in blossom,

and more productive than Brunton's Early. It is a rather large, round berry, of the best quality, and is propagated either by suckers, cuttings, or from tips layered like the raspberry.



STAYMAN'S EARLY BLACKBERRY.

A HORTICULTURAL SWINDLE.

I write you for a little information concerning Russian fruit trees. Two brothers of Iowa City are canvassing this (Audubon) county for what they call "genuine Russian apple trees." They say that there are no genuine Russian trees in America but theirs. They claim to sell for one Albaugh, president of the United States Horticultural Society. They get their trees shipped from Russia free of duty, and can sell them cheaper than other so-called Russian varieties.

Is there any truth in these statements? Who is president of the United States Horticultural Society? I did not "catch on," as I believe them to be fruit tree swindlers. This county has been sadly bled by such classes of men. By answering the above you

will greatly oblige a reader of the *Prairie Farmer*. E. J.

Audubon, Iowa.

The persons are unmitigated swindlers. 1. There is no United States Horticultural Society. 2. There are plenty of Russian apples in America, and plenty of bearing trees, and at the Agricultural college farm of your State. 3. These chaps can get no better terms so far as tariff is concerned than any one else. 4. Trees of a size for planting cannot be economically shipped from Russia to the United States; only scions for grafting are sent.

The above is taken from the *Prairie Farmer* for the information of our readers, some of whom may have a visit from some of these swindlers, who do not confine their operations to Iowa, but visit Ontario with similar tales of the wonderful things which nobody can have but they only.

GRAPES,

IN ULSTER AND ORANGE COUNTIES IN THE
STATE OF NEW YORK.

Mr. E. Williams writes to the *Rural New Yorker* an account of his visit to these famous grape regions, and gives his impressions of quite a number of varieties of grapes that he found growing and bearing. The following are some of the kinds he mentions :

Empire State, a white variety produced from Hartford and Clinton ; foliage good, vine productive ; cluster of good size, compact shoulders ; berries medium ; very promising ; quality good.

Lady Washington was found to be doing well—much better than we had expected from the culture it received. We had expected to see these grapes under the very highest condition of culture. Mr. Ricketts said this was the general impression of visitors, but here under reverse conditions they certainly gave evidence of more merit than we could expect under the circumstances. Next season the *Lady Washington* will fruit for the first time over a wide extent of territory and begin to make its reputation for the future. The Editor of the *Rural New Yorker* remarks that this has fruited at his experimental grounds, but disappoints him.

Newburgh Muscat, raised by Dr. Culbert, of Newburgh, a cross of Hartford and Iona ; white, of first quality ; one of the *best* of vines ; vigorous and apparently healthy. It was bearing its first fruit, and we could not, therefore, judge of its productiveness, but its quality so impressed all that the desire to have a vine for our own use was unanimous.

Belinda (Miner), white, sweet ; cracks badly. Of the *Lady* and *Martha* type.

Linden (Miner), black ; not as sweet as *Concord*, otherwise similar.

Brighton here was in absolute perfection. We failed to discover the least trace of mildew, and the proprietor says he has never seen it at all affected in this way on his grounds, which is the reason he has so confidently recommended it for years past, as it always does well with him.

Po'keepsie Red (Caywood), we here saw outside the originator's ground, and it is doing as well, if not better. It is said to be a cross of Delaware and Iona, much of the same character as the former—some say better. Although it originated some years ago, it is not yet disseminated.

Wyoming Red, a vigorous grower ; fruit larger than Delaware and darker in color ; very foxy and poor in quality ; ripens with *Champion* and keeps well.

Du-hess was seen at home under the master's care at Mr. Caywood's, yielding a fair crop and splitting considerably. A portion of the clusters had been bagged and these were found to be splitting worse than those exposed. As to the best time to apply the bags, Mr. Caywood claimed that those clusters inclosed at or before blooming were the most perfect. He thought the most failures with the *Duchess* were due to continuous fertilizing. If the soil was thin he would manure it well at the start before setting the vines and afterward withhold fertilizers, otherwise an excessive growth of wood and little fruit would be the result. When once established a little fertilizer in the shape of bone or wood ashes was all that seemed to be needed.

Ulster Prolific, a red variety of his, presented quite a vigorous appearance ; fruit medium ; bunch small and rather foxy. The Editor of the *Rural* adds that specimens of this variety sent to him were among the very best he had ever tasted.

Mr. Williams' next call was on Mr. Lucas, one of the most careful and painstaking cultivators in the vicinity, whom he found in the vineyard gathering the luscious Delawares, and they were very fine; clusters large and perfect. He was then getting 15c. per pound for them and 12c. for Marthas, both of which he grows largely. His Hartfords and Concords were also fine; but the long rows and well cropped Delawares attracted the most attention, as none of the party had ever seen the like before. Mr. Lucas tries to avoid over-cropping his vines and prefers a good crop of first-class fruit to a large one of second quality.

BEGONIA REX.

Nothing can be handsomer than a good plant of this, and it is an easy



BEGONIA REX.

matter to have fine specimens if only one particular is remembered, and that is, not to wet the leaves or expose them to the strong rays of the sun. They do not require any special culture, all that is required is to keep them in a light, but sunless place; keep them moist without wetting stems or leaves, and not repotting them often, for some very nice plants have been killed by this operation. A very interesting feature in connection with these plants is their propagation, which is ordinarily done by taking off a well-matured and healthy leaf, and cutting through the fleshy vein on the under side of the leaf, laying these leaves with the under side down on pans of

very sandy soil, mixed with finely cut moss, and putting a couple of small stones on the leaf to keep it down close to the sand. Keep the latter moist, and in a little while the veins will strike root where they have been cut, and young plants will subsequently appear; let these grow until well established, and then pot off singly in peaty, sandy soil, keeping close and well shaded for a few days; for this purpose a starch box, covered with a pane of glass, is a cheap convenience and will hold a good many pots.—*Farm and Garden.*

THE SQUASH.

As the Squash is of tropical origin, it is altogether useless to sow the seed until the ground becomes warm, and all danger of frost is over, which in this latitude is about the middle of May. Indeed, there is nothing to be gained by planting earlier, for when once established they grow with extreme rapidity and great luxuriance.

The Squash is highly prized by many, and with a little care and attention to the proper selection of varieties and the preservation of their fruit, they can be had in perfection for at least nine months in the year. It is also a vegetable that requires but little skill and care in its cultivation, and although they will grow readily in almost any soil, yet they will more than repay a liberal and generous treatment, and as they delight in a warm, rich soil, it is best to manure in the hill, care being taken to break the manure up well, and also to thoroughly and deeply incorporate it with the soil. At least a dozen seeds should be placed in each hill, and when the plants become strong and well established, all should be removed with the exception of three of the most promising. When young, the plants should be sprinkled occasionally with air-slaked lime, ashes, or soot, in

order to preserve them from the attacks of the bug.

There are numerous varieties of the Squash, some being of a yellow color, others pale green, and some mottled or striped; again, some are smooth and hard, others warty and rough; they are usually classed as winter and summer varieties, but from a cultural stand-point it is preferable to class them as bush and running. For the bush varieties the hills may be placed about three feet apart, and for the running sorts six or eight. Good stable manure is to be preferred. As some sixteen or twenty varieties are enumerated in the catalogues of our leading seedsmen, it is rather a difficult task for a novice to select a few of the best, and although some may differ from me regarding the merits of the varieties named below, I believe that any or all of them will prove to be satisfactory.

Where garden space is limited, and only one variety can be given one cannot do better than to choose the *Perfect Gem*. For amateurs I would have no hesitation in placing it at the head of the list, as it is excellent both as a summer and winter Squash. It is remarkably productive, the fruit being from four to six inches in diameter, and of a creamy-white color. It is also an excellent keeper in a cool, dry room, remaining in perfection until spring. It also has the peculiar property of setting the fruit near the main stalks before commencing to run; the vines occasionally reach the length of twenty feet.

The Early Bush Summer Crookneck is the best and richest flavored of the summer sorts. It is very early and is also remarkably productive, the fruit being of an orange-yellow color, covered with rough warty excrescences.

The Early Yellow Bush Scolloped, is an abundant bearer. It is a good, early

Squash. It is not as richly flavored as the preceding sort, but is earlier. *The White Bush Scolloped*, is a variety of this, differing in color only. Both varieties are more generally known under the name of *Patty Pan*.

The Turban or Turk's Cap is an excellent variety for fall and early winter use. It is of a greenish-yellow color, occasionally striped with white. The flesh is thick and of an orange-yellow color, and of fine flavor when properly ripe.

The Yokohama is also an excellent early winter sort. The flesh is of a deep orange color, sweet and dry. It is said to be superior to any Pumpkin for pies. When in perfection it is a very desirable addition to our list of Squashes, but with me has proved to be very variable, some seasons being all that could be desired, and at other times almost worthless.

The Mammoth is desirable for exhibition purposes principally, as the fruit can be grown to an enormous size, some specimens attaining a weight of over two hundred pounds.

The Winter Crookneck is of fair quality, and is a good keeper. The fruit is of a pale yellow color, with a long neck. It is much prized in the Eastern States, where it is extensively grown for fall and winter use.

Canada Crookneck is a small, early variety of the preceding. It bears and keeps well, and is by many considered preferable.

The Hubbard is a well-known sort, and is more extensively grown than any other Squash. It is the best table Squash yet known, and is a general favorite. It is an excellent keeping variety, with a dry, fine-flavored flesh, and a hard, flinty skin when properly ripe.

The Marblehead resembles the Hubbard in appearance, but is more produc-

tive than that well-known sort. It is also said to be a better keeper, but I do not find it to be any improvement in this respect. Its flesh is lighter in color than the Hubbard, and is of excellent flavor, sweet and dry, and is a very desirable variety.

The Butman resembles the Hubbard in size, but can be readily recognized from all other sorts by its bright-green color, being occasionally striped with white. It has a thick shell and cream-colored flesh. Its flavor differs from all other varieties and is dry and sweet.

The Boston Marrow is very highly esteemed by some, and is the most popular kind in the Boston markets. The flesh is of a deep orange color, and is finely flavored.—CHAS. E. PARNELL, in *American Garden*.

ORNAMENTAL SHRUBS.

The proper selection of the kinds of shrubs best suited to the extent and general character of our lawns is always a matter of importance, and, even after a judicious choice has been made, the requirements of each kind should be regarded in planting. To obtain success, precaution must be taken as to their adaptability to soil, and that the more tender ones be placed in sheltered positions. Shrubs may flourish and be perfectly hardy on one spot, while but a short distance off they will prove a failure. The soil must be thoroughly drained and the wood well ripened, or else the shrubs will not stand the winter.

The Massachusetts Horticultural Society during the past year devoted several meetings to the discussion of this important subject, and the list below comprises the species most highly recommended by members of the Society.

Hydrangea paniculata grandiflora, though introduced here over a quarter of a century ago, and one of our most

beautiful and desirable shrubs, has not been cultivated to any extent until a few years ago. The plant is perfectly hardy, and requires no care other than that bestowed upon our finer varieties



HYDRANGEA PANICULATA FLOWER-SPIKE.

of flowering shrubs. *Hydrangea paniculata*, of which *grandiflora* is a variety, has a finer foliage, is more graceful, and quite as hardy. Whether grown singly or in groups, the *Hydrangea* represents all that is grandest in a shrub, as *Exochorda grandiflora* does all that is most beautiful. To these may be added a third.

Viburnum plicatum, introduced into this country some thirty years ago, and, though neglected at that time, has recently taken its place among our handsomest shrubs. It resembles the common *Snowball*, but is much more delicate. It produces large trusses of pure white flowers in great profusion. The trusses are very compact and the individual flowers have great substance. It is not as common as the *Hydrangea*, being of slower growth and more difficult to propagate.

Viburnum macrocephalum resembles *V. plicatum*, only the cluster of flowers is larger. There are several native species well worthy of cultivation, and which thrive wondrously under a little attention.

Kalmia latifolia, also a native, is one of our most beautiful as well as showy flowering shrubs, though somewhat difficult to grow; yet, with proper attention to the condition of the soil, success will generally reward our efforts.

Prunus triloba is a beautiful shrub, with wreaths of rosy pink blossoms.

Spirea aricefolia, *S. prunifolia*, and *S. Thunbergii*, are all fine, handsome shrubs, and readily cultivated. Thunberg's *Spirea* does not grow large, and is very appropriate for small places. It blooms in early spring.

Cornus sanguinea, the Red Dogwood, "is well known, and is desirable for its winter effects, its red branches being very showy when divested of their leaves."

Deutzia crenata flore-pleno. The double-flowering *Deutzias* are rapidly growing in favor, and they ought to find a place in every garden, large or small. The dwarf single-flowering is a charming plant, which, on account of its small size, free flowering qualities and hardiness, cannot be too highly recommended for small gardens. It has ample, bright foliage, its flowers are snowy white, and are produced in great profusion early in June.

Weigela rosea has held its own against all new-comers, on account of its fine habit.

The *Rhododendrons* and *Ghent Azaleas* are too well known to need any description here. Few shrubs possess the attractions of these magnificent plants, and the admiration they excite should be a spur to their more general dissemination.

Clethra alnifolia and *Cassandra calyculata*, both native shrubs, are also very beautiful under cultivation.

Among shrubs of recent introduction the following are named as being of great promise, and desirable for hardiness and beauty:

Clematis Davidiana and *C. tubulosa* are erect-growing species, from two to four feet high, and in midsummer are covered with beautiful blue flowers like panicles of Hyacinths. Unfortunately, they do not seed freely, and are difficult to propagate. *C. Davidiana* is the more desirable of the two.

Desmodium penduliflorum *D. penduliflorum album*, and *D. Canadense*, are hardy on dry soils. All are suffrutescent rather than shrubby. The first two are especially valuable on account of blooming late in autumn, when there are but few flowers. The flowers of the first are purple, and all are pea-shaped.

Styrax Japonica is perfectly hardy in dry soils. It has white flowers, similar to those of *S. Americana*, but perhaps a little larger. The latter is a very pretty shrub, from four to six feet in height, which ought to be in every collection. The flowers resemble those of *Halesia*, or Silver Bell.

Andromeda polifolia is a native species, which, under cultivation, becomes one of the gems of the garden. The foliage is of a glaucous color. It is perfectly hardy.

Andromeda Catesbaei is of rapid growth and easily propagated. When planted with *Rhododendrons* nothing is more beautiful, and with the protection they afford is perfectly hardy; if not sheltered, the ends of the shoots are sometimes injured.

Andromeda Japonica is perfectly hardy. It wants to bloom too early in spring, but five years out of six it will be good.

Berberis Sinensis is perfectly hardy, grows two or three feet high, and is of drooping habit. When full of ripe fruit, it looks like a fountain of scarlet.

Berberis Thunbergii has fine autumn foliage, and when the fruit, which is of a deep, rich scarlet color, is ripe, forms a perfect picture. It is a low growing shrub.

Neviusia Alabamensis belongs to the Rose family; it has numerous bunches of pure white flowers, and is quite showy. Though from Alabama, it is perfectly hardy.

Erica vagans, *E. v. rubra*, *E. carnea*, and *Calluna vulgaris* all do well on thoroughly drained land, with a slight covering; if the snow blows off and leaves them bare, they burn.

Leiophyllum buxifolium has stood in the Botanic Garden at Cambridge for twelve years. It is a small evergreen bush, growing about one foot high. A larger form, from the mountains of North Carolina, has a larger leaf, of a more waxen appearance.—*American Garden*.

RELATION OF SEEDS TO QUALITY IN FRUITS AND VEGETABLES.

In 1879 I was strongly impressed with the apparent relation between the abundance of seed and the quality of the fruit in the case of the Christiana melon. Of the crop of this year I tasted many hundred melons, keeping the seed only of those which were of very superior flavor and quality. Where the quality was very superior, the quantity of seed was small; where the quality was not up to standard, the seeds were in greater abundance; where the quality was very inferior, the seeds were very numerous. I have not as yet collected sufficient material for the thorough discussion of the relation between quality and seeding, but such

observations as I have thus far obtained seem to indicate that such a relation exists; and as our fruits and vegetables gain in certain respects, this gain is counterbalanced by a loss elsewhere.—E. LEWIS STURTEVANT, M.D., in *The Journal of the American Agricultural Association*.

SOUHEGAN BLACK CAP RASPBERRY.

The Souhegan Black Cap Raspberry was grown from the seed by a farmer in Hillsborough County, N. H., in 1870, and bearing fruit of great promise was propagated and extended into fruiting plantations, and the fruit sold in the large towns of the County, for at least eight years past.

A tree dealer saw merit in its beauty and quality, and contracted to take all that could be grown for his orders. His sales were not very large, and the originator and grower of the plants did not receive much satisfaction in trying to get his rich production upon the market. He continued to grow and sell fruit, selling few plants, knowing it would sometime become known and command a place on the market.

In Hawthorne Hall, Boston, Sept. 1881, the Souhegan was under discussion before the American Pomological Society, before an audience of fruit growers from all parts of the country. Jacob W. Manning of Reading, Mass., Mr. Hale of Conn., Mr. Lovett of N. J., and others, had only good words for it. It originated in the valley of the Souhegan River, N. H. The old merits were stated as I gave them in 1879. Perfect hardihood, unparalleled in fruitfulness, berries often three-fourths of an inch in diameter, with thirty berries on a single branch, ripening before any other Black Cap known, of superior quality, a clear black color, not the light bloom borne by all other varieties of the species; the bloom or mouldy look has been a detri-

ment to the sale of the older Black Cap Raspberries, but with the Souhegan that objection disappears.

It is likely that millions of plants will be required to supply the coming demand for it. The tests of its superiority are such that it may well be said to be "a new epoch" in small fruit culture.

The Souhegan Raspberry has again fruited, this exceptionally dry season, and justifies my claim of superiority over all others of its class. It is again the very earliest, coming in just as the late strawberries go out. With good culture it will grow three-quarters of an inch in diameter, often bearing twenty to thirty berries on a cluster and carries well to market. It is of superior quality to eat, making a rich sauce, pie or pudding, or a spirited wine in case an excess of crop, or long rain, should soften the berries.

We saw fruit gathered on Saturday that stood in boxes until Monday, before sending to market, yet in condition to stand at least two days longer. It is a marvel to see the immense number of clusters of fruit that a single cane will yield.

A great number of fruit growers were slow to admit the merits of the Souhegan, who now regret the delay; but are ready to plant by the hundred or thousand now. One planter proposes to set twenty thousand, being convinced of its superior advantages, enduring the hardest winters, early ripening, quantity, size, quality, firmness, and popular demand where known in market.

The earliest picking for eight years past commenced in June.

A first-class Certificate of Merit was cheerfully awarded me for a display of the Souhegan Raspberry, by the Fruit Committee of the Massachusetts Horticultural Society, where it was shown for the first time in 1882.

There is no higher authority than the approval of the above Society where testimonials for fruit are desired.

JACOB W. MANNING.

Reading, Mass.

CLETHRA ALNIFOLIA.

This shrub is now attracting attention as a forage for the *honey bee*. It is practical to plant for this purpose by the acre; it transplants safely, is propagated very easily by suckers and layers; will grow on any soil, even if too wet for cultivation, and in any situation; blossoms late and through a long season, from July 1st to Sept. Bees swarm upon it, apparently to the exclusion of other flowers.

Miss Parsons, of Cape Ann, Mass. (where it grows naturally in the greatest perfection, in the winter of 1876, called the attention of the Editor of the American Bee Journal of Chicago to it in these words,—"I never knew it to fail from any cause whatever * * * Cold appears never to harm it. *The honey is about white, thick and of fine flavor.*"

Its leaves are light green; flowers are pure white, in spikes three to six inches long. A group of this *Clethra* in bloom will perfume the air for twenty rods around; a handful will fill a room with its delightful fragrance. It blooms from July 1st to September; its cultivation is simple, growing to perfection where the lilac will succeed. It never fails to bloom after a hard winter. Its effect is impressive when grown in large masses, as produced by a dozen or more plants set in a group. It has never been so well shown to the public as in Central Park, New York.

It leaves out late in spring and blooms on plants one to eight feet high, according to age and vigor of growth.

A strong plant in vigorous soil would make a hundred plants by suckers alone in three years, and the planter

of a thousand can extend its culture to acres.

The only question is, can the bee-keeper afford to furnish his bees with additional forage in this sweetest of flowers, blooming as it does at a time when flowers are limited. We say, that planting the *Clethra Alnifolia* is not a doubtful experiment, and certainly not an expensive one.

It is a neat, upright growing shrub as an ornamental plant. Its fragrance in a bouquet is as strong and enduring as the *Lilium Auratum* or the *Tuberosa*. I predict its coming popularity so that no collection of shrubs will be complete without it.

Its abundance and lasting fragrance suggest its use for a new perfumery.

Following is an extract of a letter by Charles Downing, the Horticulturist, whose opinion is of as much weight as that of any man in America:—

“The *Clethra* has always been a favorite shrub with me, flowering at a time when there are but few shrubs in bloom; the fragrance is delightful. It is not so much planted as it should be.”

JACOB W. MANNING.

Reading, Mass.

THE LOMBARD PLUM.

This plum holds about the same position among other varieties that the Baldwin does among apples, the Bartlett with other pears, and the Wilson among strawberries. Although moderate in flavor, the hardness, free growth and great productiveness of the tree, and the beauty of the brilliant fruit, render it one of the most valuable sorts for market. Nelson Bogue of Batavia gives special attention to the cultivation of this variety, and when on his grounds two years ago, we saw many trees, then in the third year of their growth from transplanting, bearing by estimate not less than half a bushel of plums, the

central branches being covered with dense masses of brilliant violet-red plums. He now informs us that the product of the ninety trees which we then saw, was forty-six bushels, being slightly over half a bushel each as an average. Last year, or the season following, he had only twenty-five bushels; present season the crop is estimated at seventy-five bushels, this being the fifth year from transplanting. The trees receive the best cultivation, and from some cause which we cannot explain, the fruit is not attacked by the curculio. The branches are kept clear of the black knot by prompt excision, the laborers being directed when they see any appearance of it on any tree, to drop all other work immediately, cut off the diseased portion and burn it.—*Country Gentleman*.

THE BLACK WALNUT.

An address delivered last winter by W. H. RAGAN, secretary of the Indiana Horticultural Society, on cultivating the black walnut for profit, contains so much that is valuable that we are induced to refer on the present occasion to some of the facts which it presents, and to add a few further suggestions. Mr. Ragan thinks the black walnut the most valuable of all trees for artificial plantations and timber belts. He states that a man in Wisconsin planted “a piece of land” twenty-three years ago with this tree. We are not informed the extent of the land covered with it, but that the trees, sixteen to eighteen inches in diameter, were sold for \$27,000. He adds that walnut lumber now commands from \$75 to \$100 per thousand feet in the cities, for parlor decoration and other purposes. The tree bears nuts at an early age, and annually thereafter, which have an important commercial value.

In raising the trees, it is of utmost importance to do everything in the best,

manner. Those who carelessly plant the nuts, especially after they have dried for a long time, will probably fail to get trees; or if any grow, and the owner expects the young trees to take care of themselves, he will be greatly disappointed. Mr. Ragan's directions are, therefore, to the point, when he says the ground should be prepared in the best manner in the autumn. Furrow the ground off each way as for corn, except that the rows should be seven feet apart. Take the nuts, fresh from the tree, and plant two at each crossing. They are to be covered shallow, just enough to hide them. So much for planting. Then next spring furrow the seven-foot spaces intermediate between the rows, and plant with corn or potatoes. The corn and young trees will be all cultivated alike, and the young trees must be kept clean. The second spring thin out the trees to one in a hill. The thinnings will fill any vacant spaces where needed. Corn or potatoes may be planted the second, or even the third year, and after that the trees must be cultivated and kept clean until they occupy the whole ground so fully as to keep down by their shade all weeds and grass. Standing so near as seven feet, the trees will not require trimming, but will thus trim themselves. But when they begin to suffer from crowding, take out every alternate tree in each row, and in a few years another thinning may be made by taking out alternate trees in the rows at right angles to the first, leaving them fourteen feet each way. If the trees are to stand until they become quite large, additional thinning may be necessary. But they should always be thick enough to obviate the side trimming of branches. The thinnings will always possess considerable value.

At fourteen feet apart there would be over 200 trees to the acre, and these should sell for five dollars each in a quarter of a century, or \$1,000 an acre.

It is not likely that the timber will become cheaper in future years. If the good cultivation and management here described are given, there will be little or no failure of a full, even growth. If the work is carelessly performed, and the trees neglected, they will be poor and scattered. The regular planting in rows, and the continued cultivation until they wholly shade down all other growth are indispensable to success, and they are equally necessary in raising plantations of any other trees, as chestnuts, locusts, or catalpas.—*Country Gentleman*.

SOME NEW SORTS OF BEANS.

The White Marrow is still as popular as ever and is extensively grown for large markets.

The Early Feejee will always be a popular variety from the fact of its extreme earliness and being very hardy. It is one of the most productive we have, and the quality is excellent. In New England many of the farmers after hoeing the corn the first time plant beans between the hills, and so obtain two crops from the same field, while the latter product is protected by the growing corn, and if a little late is not liable to be injured by early frosts. Very often from eight to ten bushels are obtained to the acre when the season is favorable and the soil is moderately rich; for be it remembered that soil for beans must not be too rich since they are apt to "run to vines" instead of beans, hence the soil should not be too fertile. We wish in this article more especially to call attention to two or three new sorts of dwarf or bush beans as being well worthy the attention of all growers of the low growing sorts.

There are four sorts of wax beans—Black Wax, Dwarf White Wax, Crys-

tal White Wax, and Golden Wax Dwarf. The first sort is not a new sort, but its excellent quality makes it a popular variety to cultivate wherever known. As a string bean it has but few equals, and it is also a good shell bean. The White Wax, a pure white sort, cannot be too highly praised, and every kitchen garden should contain a few hills of this desirable bean. The Crystal White Wax and the Golden Wax Dwarf, two new sorts, are decidedly among the best varieties of bush beans grown, and command the very highest price in the markets. The first sort is a beautiful white bean, with large waxy transparent pods. It is stringless, very crisp and tender and of fine flavor. The pods harden slowly, so that they remain in good condition for the table longer than most of the other sorts. This sort commands the highest price of any bush bean grown. The Golden Wax Dwarf has the name of being not only a good snap bean, but also a good shell bean, and is therefore a desirable sort to grow for the market, while for the farmer's own table hardly any other sort can take its place. The pods are of good size, long and quite brittle. Some marketmen pronounce it the best snap bean cultivated, its tenderness and flavor making it extremely popular. When grown on suitable land the bean crop is one of the best paying of all products grown on the farm, since they command a ready sale and usually are a cheap article of food. Of running beans the new sort from France known there as the Moret D'Or and here as the Golden Butter bean is attracting considerable attention. It is without doubt one of the most prolific of the pole or running sorts, while its quality is unsurpassed. The pods are a golden yellow, very handsome and well-filled. Growers of the pole bean should certainly test this sort.—*Farm and Garden.*

WHAT PLANTS TO GROW IN THE HOUSE.

Most amateur florists undertake too much. They would like a large collection and they want choice kinds like those they see in conservatories belonging to wealthy people.

After several years of experience I have come to the conclusion that we have but a comparatively small list of plants which it is advisable for the amateur to select from for ordinary window culture. As one gains experience and becomes familiar with the requirements of the plants under his care, it will do to "branch out." Plants which they would have failed with at the beginning, they may succeed with later. It is better in this, as in most other undertakings, to go slowly. Learn how to take care of a few less particular plants before you undertake to care for some which require more careful treatment.

Let us suppose that you have but one window in which to grow plants; you want flowering kinds for the most part, and you cannot have more than a dozen in all unless your window is a large one, for it is far more satisfactory to have a few plants with room for development than a large number crowded together until all individuality is lost in a confused mass of foliage. Shall I select for you? Well, my first choice is the

GERANIUM,

because it is one of the most easily cared for plants that we have, and it is one of the most free flowering, and its foliage is always bright and vigorous. There are other plants that I prefer to the Geranium, but under the supposed circumstances none that I would unhesitatingly recommend. It is sure to do well if not shamefully neglected. It is the flower for the million. The particular varieties I would leave you to select for yourself. I think I would first

choose a scarlet. The variety called "Herald of Spring" is my favorite among the scarlets. But there are dozens of others which you might consider equally as fine, possibly finer; and where there are so many to select from it is not of much use to name one particular variety. I would select the Single Geraniums for winter culture because the double varieties do not bloom freely beyond November. To my mind the single ones are handsomest. If you want a pink variety, one that is almost always in bloom, you can do no better than take "Master Christine." It is a beautiful, soft rose color, marked white, and blooms profusely. You can suit your taste about color, for we have Geraniums in all shades of scarlet and crimson, pink, salmon, magenta and white. The "nosegay" or Dwarf Geraniums are better for small collections than larger growers, for, while the plant is dwarfish, the flowers are as large and profuse as those on the robust kinds. Of course you want a *Rose Geranium*. No collection is complete without it.

HELIOTROPE.

This favorite flower will bloom all through the winter, and though not showy, its fragrance and its modest beauty make it a general favorite. It likes a warm sunny place. You want a



CALLA.

It would be well worth cultivating if it did not bloom, because of its large, fine leaves, borne on stalks from a foot and a half to three feet high, giving the plant a tropical appearance. When we add to the attractive foliage its large, trumpet-

shaped white flowers, with their delightful fragrance, we have one of the finest and most desirable plants in the entire list of kinds suitable for house-culture. It requires a large amount of water and the pot should stand in a deep saucer which is never allowed to get empty. Let the water given it be as warm as you can bear on your hand.

For an additional list, I would name *Carnation*, *Abutilon*, *Begonia*, *Chrysanthemum*, *Cyclamen*, *Eupatorium*, *Petunia*, *Chinese Primrose*, *Oxalis*, *Lantana*, and for training about the window, *Ivy*, *Cobea* and *Smilax*.—E. R. REXFORD, in *Farm Library*.

FRUITS IN RUSSIA.

The readers of the *Canadian Horticulturist* will remember some communications from Mr. Chas. Gibb, written while he was in Russia investigating the fruits of that country, and published in the November number for 1882. He was accompanied by Prof. Budd, of the Iowa Agricultural College, who writes as follows to the Iowa *Homestead* :—

"The blackberries, huckleberries and cranberries we see here are wholly unlike those of the United States. I should also state that plums and cherry trees are not grown in tree form any more than are the gooseberries and currant. They are really large bushes with several stems from the roots. The pruning is done by cutting out the older stems, as the most and the best fruit is found on the younger offshoots. Really these northern cherries and plums are large shrubs rather than trees, but very desirable in fruit.

"In fruit growing the Russian is a creature of habit and a close follower of the habits of his forefathers. This tendency is bad enough in south Europe, but it is intensified here to a degree often painful to the versatile American. For instance, in the immense province of Vladimiro, east of Moscow, the whole province is given to growing the cherry. Hundreds of proprietors have orchards of

ten thousand trees (or rather bushes), and the products are shipped to every part of the empire. In the cherry season, Vladimio cherries are plenty and cheap in every Russian city reached by railroads or water. We are told that whole trains are loaded with them for Siberia and the far north-eastern cities of the plains. South of Vladimio, but still near to the 50th parallel, where the thermometer reaches at times 50 degrees below zero, Fahrenheit, is grown the plum in quantities absolutely immense. These plums vary in season and color, but they are all of one race, which seems indigenous to northern Asia. Many of the varieties we met at Nishney are equal to the best German prunes, which they resemble in shape and texture of flesh. The color is usually red, and the *suture* at one side is peculiar to the race. As we go south (or rather east of the Volga), we reach the apple growing districts, not because the soil or climate are better than in Vladimio, but because the people happened to drift in the early ages in this direction. One of the large orchardists who brings fruit here by the barge load grows only four varieties specially suited for the Nishney market during August and the first week in September. These varieties are (1) *Borovetsky*, a large oblong variety with crimson stripes. In quality and appearance it is superior to our Duchess. (2) *Miron Krasnui*, an early variety now past its prime. It is showy, mild in flavor, and much eaten from hand by Russians, who do not like acid apples except for cooking. (3) *Titofka*.—This is not our *Tetofsky*, but it is a very large, oblong, ridged, highly colored, and really good variety. Many of the specimens look so much like large specimens of Benoni as to deceive the expert. The flesh is pinkish white, somewhat coarse, but breaking, tender, juicy, and pleasantly sub-acid. This variety seems popular in all parts of Europe. (4) *Summer Aport*. In Russia are grown four Aports, three of which are late autumn or winter. The one now in market on the Volga in immense quantity is known in Moscow as *Aport Oseniavi*. It is large and highly colored with splashes of pink and crimson. It may always be known by its one-sided stem and lip, something like Roman Stem."

PARIS GREEN FOR ROSE BUGS.

I heard a member of the Western New York Horticultural Society say at the meeting at Rochester last winter, that Paris green could be used with safety on grape vines, to protect them from the ravages of rose bugs, and it encouraged me to try it on my vines this summer. I have about 150 newly planted vines that were growing finely. They were attacked by the rose bugs; many of them were nearly covered with them, and were fast being destroyed. I applied Paris green in water in the same proportion that I use on potatoes—about one teaspoonful to a pailful of water. It cleaned the vines of bugs, but a two days' rain washed off the poison, and we gave them a second application, thoroughly drenching the vines, and they are now free from bugs, and I cannot see that they are at all injured by the poison. I give this experience as rose bugs have proved a great pest to grape vines in this State. —C. D. S., *Spencer, Mass.*



ROSE BUG.

GRAPES, THEIR VALUE AND CULTURE.

The value of the grape, and the ease with which it is cultivated, are two points not yet so well understood by American farmers as they should be. No Fruit is more refreshing, and none more healthful. There can be no doubt that if grapes were grown and freely used by every family in the land, the avoidance of sickness and its attendant loss of time and expenditure for medicine, would many times compensate the time and money expended in their culture, saying nothing of the comfort they would add to many a household. But besides being among the fruits most valued by the rich, no fruit is so emphatically the poor man's fruit as the

grape. Whoever owns a house with a strip of land three feet wide around it may produce an abundant supply of grapes for his family ; and in order to do this he need not spend more than three or four hours' labor during the year. Even he who lives in a rented house may produce his own grapes, as his vines may be planted in tubs of earth which he can carry with him from place to place, bedding them in the soil of each successive home until the time for removal comes, and feeding them with the material which is the universal product of every household, and which might thus be made a means of adding to the comfort and health of its inmates, instead of being, as it now so often is, a medium for the spread of disease.

The grape vine is ordinarily propagated by taking well-ripened wood of the present season's growth, after the leaves have fallen, cutting it into lengths containing two or three joints each, and planting these cuttings in mellow earth at such depth that the top bud shall be just above the surface. In making the cutting, the vine should be cut away close below the lower bud, but a couple of inches should be left above the top bud in order that the cutting may be more easily seen in hoeing. Of cuttings thus managed and kept moderately moist, the larger portion will strike root and will make, during the season, a growth of a few feet of vine and a dense mass of fibrous roots. These make the "yearling" vines of the nurserymen, and are decidedly preferable for transplanting to the older vines in our estimation.

One-year-old vines of the common sorts may be bought at a price which leaves no excuse on that score for neglecting to plant. Such a vine, if planted in a well drained and thoroughly pulverized plot of land, will be ready to begin bearing by the third year from the planting, and when in full bearing

will yield annually from a few pounds to several bushels of fruit, according to the season and to the manner in which it is trained, since it may be kept within a very small compass, as in field culture, or allowed to spread at will over a wall or tree.

Any soil which will produce wheat or corn will produce grapes ; but drainage either natural or artificial, is essential. If the soil is not naturally rich, it should be well manured, in order to produce a rapid and vigorous growth of vine during the first three years.

Of varieties, the Concord is the one grape for the million. Vigorous, hardy, productive, of a flavor that only the connoisseur finds defective, it combines more excellencies than most other varieties. For him who plants but one vine, the Concord, therefore, is the vine to plant. When the vineyard becomes large enough to begin to admit of variety, then plant the Delaware, which is nearly as hardy as the Concord, while the fruit is of more delicate flavor.—*Farm and Fireside.*

FUNKIAS.

These, botanically known as *Funkia*, and commonly called Blue or White Day Lilies, according to the color of their flowers, are among the good old-fashioned, hardy perennials we should like to see more recognized in our gardens than they are at present. They are natives of China and Japan, perfectly hardy, and adapt themselves very agreeably to cultivation in our gardens. There are several sorts well worth growing and not uncommon in our gardens but there is great confusion in their nomenclature. Siebold's *Funkia* is a noble plant and forms a large mass of tropical-appearing, glaucous-green leaves which are of themselves very ornamental. It blossoms about or before the middle of July, and has large,

lilac-blue, scentless flowers. Fortune's Funkia is nearly related to Siebold's. The species commonly known as the White Day Lily, namely subcordata and its larger form called grandiflora are, however, perhaps the best of all for us. They have large masses of green leaves, and in July and August, lots of large, funnel-shaped, white, fragrant blossoms. The common Blue Day Lily, known as *ovata*, is at its best during the last fortnight of July; it is, too, a vigorous species with ample leaves; but of it there are some varieties of smaller growth and later season. The Narrow-leaved Funkia is a pretty little species that blossoms in September; its flowers are blue. Besides these species and several other varieties esteemed for their flowers, there are many very distinctly variegated-leaved varieties, such as the White, the Blue, the Lance-leaved, and especially one called *undulata*. The most prominently variegated form of *undulata* has white leaves banded around with green, not unlike those of a recently introduced hydrangea. The variegated forms flower as freely as the plain-leaved ones, except, perhaps, in the case of *undulata*, but in that instance the foliage is reckoned of more importance than the flowers, and in order to prolong the season of the good condition of the leaves, the flower spikes are usually plucked off before the blossoms open. Besides, as border clumps the variegated sorts are often used as edgings to shrubby borders.

These Funkias are of the easiest possible culture, and enjoy a rich, friable soil and a sheltered but faintly shaded situation. They will grow well enough in the open, sunny border or under the thin shade of trees, and the stronger kinds especially will hold their own with profit if planted out as clumps upon the grass in some slightly shaded place. The great drawback to the planting of them in open, sunny places is their suscepti-

bility to "scorching" in Summer. It is very vexing to find that when your Funkias are in untarnished vigor, there comes a shower or a day or two of dull weather succeeded by hot sunshine, and your Funkia leaves are all damaged. But such is the case, and we know of no plants more certainly affected in this way than the Funkias.

They all ripen seeds; some kinds, as *ovata*, do so extravagantly, but for tidiness sake it is well to cut over the spikes as soon as the flowers are past. They are readily propagated from seeds; indeed, even so fine a species as Siebold's sows itself freely; but the variegated forms are perpetuated by division. They are perfectly hardy, but the first frost cuts them down as if they were dahlias, but the roots are unhurt. It is a good plan then to cut away the leaves and place a forkful of decayed manure about their crowns there to remain; when they begin to grow in Spring, their leaves will soon cover the manure which not only stimulates them as food, but preserves the soil cool and open about the crowns.

Funkias used to be known as Day Lilies, but this common name being also used for the genus *Hemerocallis*, Mr. Robinson, of England, recently advertised for a new English name for Funkia. Among the many proposed "*Plantain Lily*" was the one he accepted. He deemed it a happy one, because of the likeness of the Funkia leaves to those of some of the tropical plantains. —*Rural New Yorker*.

WILSON STRAWBERRY.—A correspondent of the *Country Gentleman* writing from Ohio, says in an article on the fruit raised in his State: "Of strawberries, the Wilson takes the lead in about the proportion of ten acres to one of all other varieties grown; and as far as I can judge will continue to lead for some time to come, as no other variety that I know of is so popular both with growers and buyers."

THE CARDINAL FLOWER.

Clare, Anabel, and little Hugh,
Brush from the grass the morning dew,
In quest of flowers. With laughter sweet,
They press with eager, tireless feet,
Down lanes ablaze with Golden Rod,
Where white and crimson Thistles nod,
Where purple Asters, leaning, look
At purple Asters in the brook.

They gather wreaths of Clematis,
And blithely, deeming naught amiss,
Where pale pink Roses lately grew,
Pluck shining spheres of scarlet hue,
And berries like red ivory gleam
From stems of glossy Wintergreen.
And now their bright, enraptured eyes
Are fastened on a rarer prize;
Upon a steep bank, just beyond
The confines of a marshy pond,
In lonely grandeur brave and tall,
There flames a scarlet Cardinal.

They pick their way among the rocks,
Their pains the radiant vision knocks.
All reaching is in vain, and they,
With backward glances, turn away,
Till, flushed and weary with their toils,
And laden with the brilliant spoils,
That, wilting now within their arms,
Are losing fast their early charms,
They rest beside the roadside brook,
With half a disappointed look.

Ah, Clare and Anabel and Hugh,
Not if you search the meadows through,
And gather more than you can hold
Of autumn's purple, red, and gold,
Will you find aught so fair to each,
As that one flower you could not reach!

Congregationalist.

COVERING STRAWBERRY BEDS.

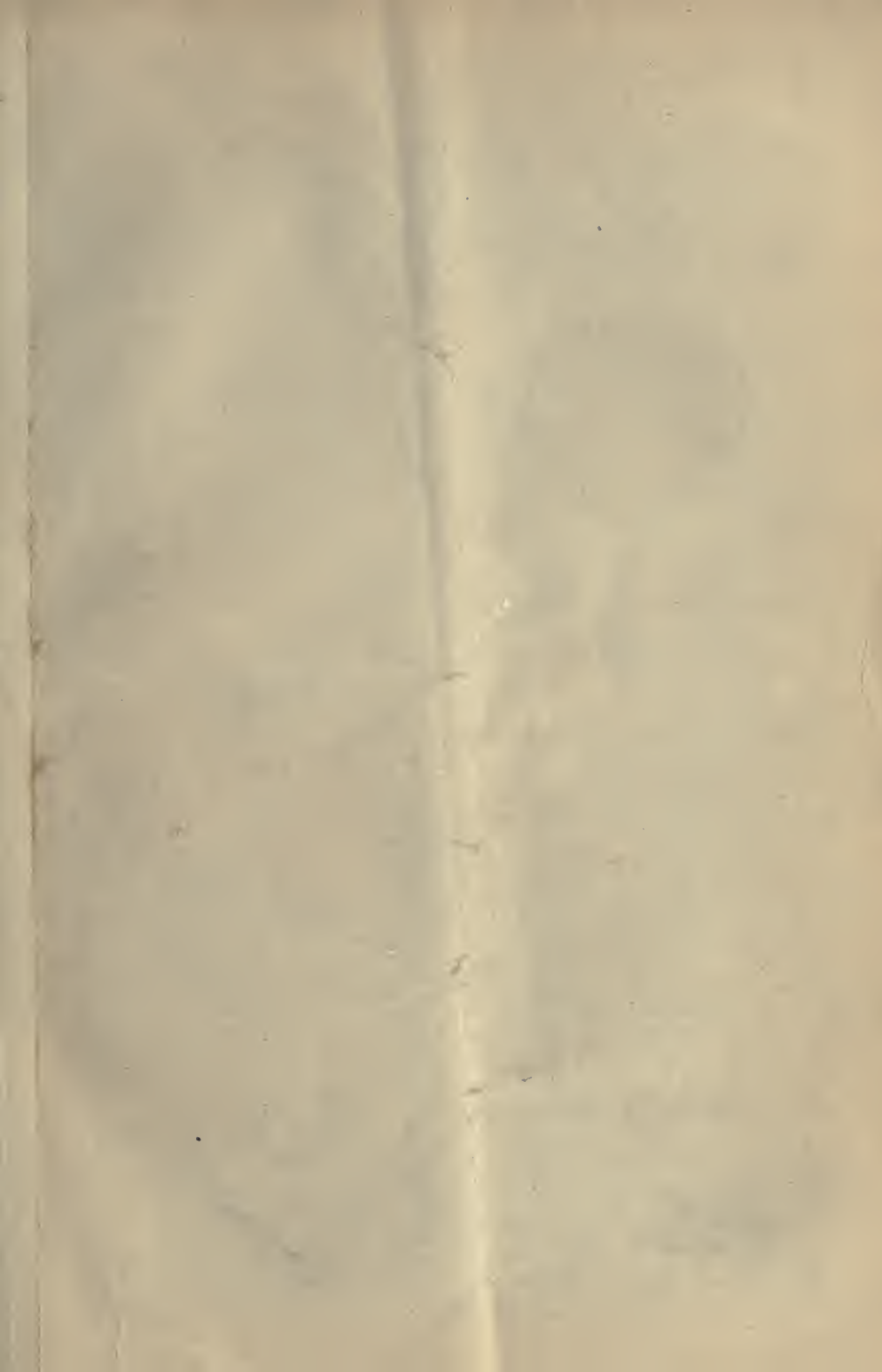
The *Germantown Telegraph* says:

"Often there is much said, and especially at this season of the year, about covering strawberries; and many persons are induced by what they read to act so as to heartily regret it when the spring comes round. We have known people to act on this suggestion, and cover their strawberry beds with manure, and find the whole completely rotten in the spring. And yet a little covering with the right kind of material is not a bad thing. If the plants are left entirely unprotected the leaves are browned and often destroyed; while it must have been noted by every observant gardener that the best fruit comes from plants that have managed to keep their leaves bright and green till their spring

flowers appear. And this is why a covering of snow the whole winter is so good for the strawberry crop. As we have remarked, when the leaves are browned the crop is small; but when the snow covers the plants all the winter long, they come out in the spring in the best possible condition.

"But we cannot always depend on the snow. It does not always come, or continue in the regular way. So if some light material can be put over the plants, that will not smother and rot them, and yet will be just enough to make a shade from the winter sun and a screen from frosty winds, it will be doing a good turn to the strawberry plant. Manure is bad. There is salt in it, especially when fresh, which is destructive to foliage; but clean straw, or swamp or marsh hay that is free from weeds, answers the purpose very well. But it must not be put on very thick. The idea is, just enough to make a thin screen, and yet not enough to hold the moisture long. Shade without damp is the idea. Such light protection is good for the strawberry plants."

THE CARDINAL FLOWER.—There is no difficulty in cultivating the Cardinal Flower (*Lobelia Cardinalis*). It prefers damp, rich soil, but with a little care it can be grown almost anywhere. The best way is to get a good load of swamp dirt, which is mainly leaf mould, and make a bed in a shady or half-shady position. Of course the plants will do better if they can be removed from their native place with care, retaining a good quantity of soil with the roots, and be speedily replanted; but we have taken them up with but little soil, kept them several days, carried them a hundred miles, and planted them in conditions not particularly favorable with very good results. Among the many too much neglected native wild flowers there are none whose form and color better challenge our admiration; and when we know with what ease they are started, and that, being perennial, they continue from year to year to repay the attention once bestowed, we wonder they are not more frequently seen in our gardens.





CLEMATIS COCCINEA

THE Canadian Horticulturist.

VOL. VI.]

FEBRUARY, 1883.

[No. 2.

THE CLEMATIS.

This interesting and valuable genus of climbing plants is attracting much attention both in Europe and America. As the result of careful cultivation and the crossing of different species we have now some very beautiful and showy varieties. These plants belong to the natural order Crowfoots (*Ranunculaceæ*), and are characterized by a valvate coloured calyx, and by having the carpels when ripe terminated by long, feathery styles. In some of the species the flowers are not as attractive as the seed vessels are when plumed with their long feathery styles. In England the most common species is known as the Traveller's Joy, *Clematis vitalba*, which runs over the hedges in some parts of the country, covering them with a profusion of white blossoms, to be succeeded by heaps of silky tufts. Some of the species are fragrant. The one known as *Clematis flammula*, a native of France, is exceedingly rich in perfume. Until within a few years the Clematis were chiefly used to cover unsightly objects, though occasionally *C. viticella*, a purple flowering species introduced into England from Spain, was used as an ornamental climber. In the year 1851 a large flowered vari-

ety, known as *C. lanuginosa* was brought from China, about fifteen years after, some English gardeners, notably Mr. Jackman of the Woking nurseries, conceived the idea of crossing these two last named species. The result of this crossing has been the production of a race of hardy, free flowering Clematis, with large, showy flowers, which make a grand display either as climbers upon pillars or lattice, or trained upon the ground as bedders. These beautiful flowers are mainly of two colours, purple and white, of various degrees of intensity and purity. The only variety approaching a red is of a dirty brick-red hue, by no means satisfactory to the ornamental gardener.

In the variety (*Clematis coccinea*) now presented to the notice of our readers in the beautiful colored plate which adorns this number, and for which we are indebted to the liberality of Messrs. V. H. Hallock, Son & Thorpe, of Queens, N. Y., we have a very different type of flower, quite unlike the broad-petaled, showy blossoms of the Jackman group, but giving us that much-coveted, brilliant, scarlet color so entirely wanting in those hybrids. It is not necessary to give any description

of this new species, the illustration is so true to nature in every particular, that our readers will understand the habit of the plant and the form and color of its flowers from an examination of the plate better than from any description in words. It remains only to say that, in this climate at least, it dies down on the advent of frosty weather to the ground, springing up again on the return of warm weather, and growing very rapidly, comes into flower in July and continues to bloom profusely until stopped by the frosts of autumn. The root has so far proved to be perfectly hardy in the Niagara district, without any protection whatever. Like all climbing plants of this family it requires to be well fed, in order to secure rapid growth and continuous and profuse bloom.

RUSSIAN FRUITS.

Mr. Charles Gibb, of Abbotsford, Province of Quebec, writes to the *Journal of Agriculture* from St. Petersburg, Russia, that the hardiness of a variety is not dependent upon the place of its birth, but upon hardy ancestry; hence he finds in England and France, under English and French names, apple trees of that early terminate growth and thick pubescent leaf which show pure Russian or Astrachanic descent. At Reutlingen, in Wurtemberg, he found the perry and cooking pears to be of a different race from those of Western France, and at Vienna a race of apples wholly new to him, with very thick, small, plicate leaves, natives of Transylvania, some of which grow from cuttings like currants.

Many of the fruits of Poland he found to be of native origin and quite

unknown in Western Europe. In the nurseries, and in the gardens of the Pomological Institute at Warsaw he met, for the first, with collections from the Russian steppes. The Antonowka and Titowka seemed the most popular of the coast-section apples. The hardiest good pear is the Sapieganka, of which he saw trees, whose trunks were two feet in diameter, growing in the cold climate of Wilna. At Riga he found that the selections of apples were made mainly from the Russian steppes, and that the trees and shrubs in the nurseries were largely Asiatic.

At St. Petersburg, in latitude 60°, so far north that for nearly two months in the summer the stars at mid-night are not visible, the sun being too short a distance below the horizon, he learned that the trees and shrubs of Central Europe have usually failed, and have been replaced by those from Northern Turkestan, Southern Siberia, Mongolia, Dahuria and the Amoor district. The market was supplied with cherries from the cold region of Vladimir east of Moscow, which variety and the Ostheim cherry he says are better than the Early Richmond and the Kentish, and can be grown in much severer climates.

At Moscow he found himself somewhat north of the limits of successful fruit culture. Five years ago, a week of unprecedented cold had killed or injured most of the trees in their fruit gardens, which in many cases had not been replanted.

In the Vladimir district he found that there are sections where the chief commercial industry is cherry culture, which cherry is usually of large size, and when fully ripe nearly black in color and almost sweet, and in quality very much better than our Kentish. Many proprietors have ten thousand trees, or rather bushes of this cherry, and entire cars, and at times even whole

trains are laden with this cherry for the different markets. The climate here is as cold as that of Moscow, where the thermometer falls to 40° and 44° below zero, Fahrenheit.

On the west bank of the Volga, south of Kazan, but seven hundred miles farther north than the city of Montreal, are, he says, twelve villages where apples are grown in large quantities, sometimes to the amount of fifty thousand dollars in value, for the markets of Nijni, Novgorod and Kazan. He believes this to be the coldest orchard region in the world, where the apple trees are mere bushes grown in clumps of two or three together, and the clumps twelve feet apart each way. He found these orchards heavily laden with fruit, notwithstanding that the thermometer fell last winter to 40° Fahrenheit, below zero; and in the winter of 1877 stood for a day and a half at *fifty-eight below zero*. He remarks that the trees are slow, crooked growers, such as our nurserymen hate to grow, and would hardly be able to sell in Canada after they had grown them, but they begin to bear young, and bear abundant crops of fair sized fruit of really fine quality and that keeps at least until mid-winter. These trees are hardier than Duchess of Oldenburg or Alexander and should succeed on Pembino mountain in Manitoba.

At Simbirsk, further south, in latitude 54°, where the winters are quite as cold as at Quebec, he found the same varieties of apples grown in quantity, and also many thousand pear trees, a large number of which are unfit for eating either raw or cooked, yet several varieties of the Bergamot and other types are sweet, free from astringency, and worthy of introduction.

The plums he found in those northern regions were to him quite a new race, were bushes also, bearing profusely, some red plums, some white, but mostly

blue plums, the best of which he considered to be very nearly if not quite equal to our Lombard plum. Yet he inclines to the opinion that the improved varieties of the wild plum of the north-western states are the best for the colder sections of Canada.

At Seratov, in latitude 51½°, he found an orchard of twelve thousand trees, employing three hundred pickers, and eighty-five packers, which had shortly before sent one thousand tons of apples to the Moscow market. He also found at this place a pear orchard of five hundred trees. And yet, he adds, there are times here when the *mercury becomes solid*.

Turning westward into Central Russia he finds new varieties of the apple. Here, at Voronesh, the apple grown on the Volga from Seratov to Kazan, called the Annis, is not known, and the variety called the Antonowka takes its place. He does not give any description of the tree or fruit of this Antonowka variety, nor compare it in any way with the Annis race which he found so abundant on the Volga, but remarks that fortunately the best varieties of the Russian fruits have been included in the collections sent from Moscow to the Iowa Agricultural College.

He speaks frequently of the kindness he experienced during his travels in Russia and the interest taken by the gentlemen he met in the object of his researches and the facilities afforded him for pursuing his inquiries. At our latest advices he was in England, having reached that far on his return home.

GRAPES AT ORILLIA.—Mr. William Gillett, who is a member of the Ontario Fruit Growers' Association, raised over five hundred pounds of fine grapes the past season. Mr. Gillett is thoroughly conversant with the subject of fruit growing, and experiments largely in new varieties.—What we want is more men of this stamp.—*Orillia Packet*.

CORRESPONDENCE.

THE MICHIGAN STATE HORTICULTURAL SOCIETY.

TO THE EDITOR OF THE CANADIAN HORTICULTURIST.

MY DEAR SIR,—The annual meetings of the above society were held in the city of Flint, Mich., December 4th, 5th and 6th, and as I was permitted to be present for the first time at their meetings, I would like to give you and your readers a few notes regarding it and its work, hoping that it may be of interest to them. The city of Flint is the capital of Genesee County, and is one of those American cities, or rather towns, that to be seen is to be admired. It has a wealthy population of some 10,000 people, and has all the advantages of modern city life. It has two railroads coursing through its limits, crossing each other, viz., the Grand Trunk and Chicago R. R. and the Flint and Pere Marquette R. R., which affords it every accommodation. It is beautifully located on an eminence bordered by the river from which it took its name, which river rises some distance to the east, and after tracing Lapeer, Genesee and Saginaw counties, empties into the Saginaw river. It was formerly a noted lumbering centre, but since the supply is now very much reduced, its principal industries are manufactures in the useful arts, commerce, &c. Here is one of the finest buildings erected in the interests of higher education that is to be found in that State, and is said to have cost one hundred thousand dollars. Here also is the noted Institute for the education and training of deaf mutes, where large numbers of these unfortunates are cared for and qualified for lives of usefulness. The streets of the city are wide and well ventilated, and everywhere made cheerful and beautiful by being liberally planted with shade and ornamental trees, mostly of our choice and popular sugar maple.

The streets are laid out at right angles and the soil is high, dry, and easily drained, having a gentle slope every way to the river.

The Society was holding their meeting in Flint on the invitation of the Genesee County Horticultural Society, who made ample arrangements for the comfortable accommodation of all delegates and members who might favor them with their presence, either free in private houses or at reduced rates at the hotels. The place of the meetings was Convocation Hall, in the High School building, and was very ample for a large attendance, and purposely decorated for the occasion. The room was large and well seated, and the walls were embellished by large and handsome charts illustrative of Prof. Beal's lecture on botany, entitled the "Growth of a tree." The dais contained the President's and other chairs and the desks for the reporters, &c., and was beautifully set off by many pots of ornamental green-house plants, many of which were in bloom. The raised fruit stands along the whole width of the large hall were almost covered in their great extent by the largest and finest display of fruits, vegetables, &c., that ever I saw at a fruit meeting of this kind. In fruit there were apples in large quantities, pears, grapes and oranges, besides dried fruit; jelly and honey, marmalades and amber syrups. In vegetables there were potatoes in enormous quantities, cabbages, cauliflowers, turnips, celery, &c., all of which were very fine indeed, and the interest taken in the display was constant and great. The first sitting was opened at about eight o'clock, in presence of some two or three hundred members, &c., by an address of welcome by the mayor of the city, and was very happy and well received, the President, in the chair, replying, after which Prof. A. J. Cook, of the Agricultural College,

Lansing, introduced the theme of the evening, by reading a masterly paper on Evolution as scientifically understood. It was exceedingly interesting and was received with the most profound attention. After much hand-shaking and familiar congratulation, the first session of the society was brought to a close. The succeeding sessions were very admirably opened by delightful singing by the pupils of the High School, who came into the room *en mass* bringing their organ with them, and under the efficient leadership of Superintendent Gass, M.A., it was really very inspiring to hear those well trained young people sing so finely Longfellow's beautiful but earnest words :

"Life is earnest, life is real,
And the grave is not its goal ;
Dust thou art, to dust returnest,
Was not written of the soul."

The reading of the Scriptures and prayer was then done by one of the city clergy. This was really a fine opening for a fruit meeting and worthy of the highest commendation. The various topics brought up for discussion were introduced by a well written paper by a person previously notified and announced. After the readings the discussions were full, free and in the most friendly and agreeable tone, apparently no selfish ends or objects ruling. Indeed I may say, with great satisfaction, that the tone of all the sessions was one of extreme tenderness, and the interest in the meeting was constant and unabating. The presence, at the various sessions, of numerous ladies of apparently high standing in society added much to the interest and beauty of the meeting, and was a source of encouragement by their timely presence and assistance. The interest these seemed to take in the proceedings was earnest and untiring. In the case of one good lady who had duties to perform that required her

immediate and motherly care, but was more than a match for the difficulty by bringing her knitting to the meeting with her, and while her nimble fingers were faithfully plying the shining needles in the stitches, her attentive ear and her ever-watchful eye as carefully and untiringly followed the speakers on the theme of discussion. Oh, Hood ! had you lived to see our day, how much would you have to modify the tone of your famous "*Song of the Shirt*." The final closing session on the evening of the third day was very grand indeed, and the like of it I had never before seen at a fruit meeting. I consider it was the finest and fullest exponent of the question, "How to make Horticultural meetings interesting to the public ?" One of Steck's grand concert pianos was brought on the dais, and by the instrumentality of cultured and trained fingers was made to do most excellent service. The meeting was publicly announced to be free, and the citizens in great numbers came in and nearly filled the great hall. The programme for the evening was well arranged ; short, pithy speeches of not more than five minutes in length by members of the society and distinguished guests who were present, interspersed at frequent intervals by choicest music. The programme was carried out in the happiest manner and with the most cheering results. Secretary Garfield, who is one of those who are ever ready for any work, and who happily always has just the right thing to say in the right time and place, was the very life and soul of the meeting and a large contributor to its success. Altogether these meetings will long be remembered for their friendly associations and for their tender and interesting tone.

The lessons to be learned from this interview are : 1st. How to get the popular interest at Horticultural meet-

ings? By constant and well-directed efforts in educating and elevating the people; by soliciting attention and attendance; by offering benefits to those who attend, and by giving them something they can carry away with them for their encouragement and future guidance in life. 2nd. How to get a fine fruit display at our meetings? By officially requesting contributions, and by offering premiums and distinctions to those who do contribute. 3rd. How to keep up the interest and the attendance to the end? By having a well digested programme of popular and interesting subjects, and by getting out the fullest and freest discussion upon them, and by having an interesting variety every day.

B. GOTT.

Arkona Nurseries, Dec. 12th, 1882.

FRUIT IN MUSKOKA.

For a considerable time Muskoka District has been celebrated for producing the very finest potatoes, and only till recently has it been established that most of the hardier sorts of apples, plums and grapes will grow abundantly if only cared for.

At the County show last September we saw some very fine specimens of "Duchess of Oldenburg" apples, grown by Mr. Bowerman, of Bracebridge, on trees two years from planting. Mr. T. M. Robinson, of Muskoka Bay, grew some fine specimens of Tetofsky fully ripe 15th September, and Mr. James McAllister exhibited some exceedingly fine Haas apples. Mr. Hughes, on the Muskoka River, showed several plates of Muskoka seedling apples, all of a fair size, free from defects, and having good keeping qualities. Several other parties had splendid exhibits. I could not learn to whom they belonged, or the varieties, but the whole exhibit was one which plainly demonstrated

that apples can be grown here to perfection.

Settlers in this district need not fear to plant a good orchard with hardy sorts of apples, and let the above three sorts be the prevailing kinds. While here I may say that one of the principal reasons why apples have not been grown so satisfactorily earlier in the history of the district, is that settlers generally have too small a plot of ground assigned for garden and orchard, and this almost invariably includes the door yards; and of course the cattle come to the door in winter, and are not long in browsing the branches, and after a few days limbs and all are gone, leaving only a wretched stub. I think settlers now see the need of more care and cultivation, and if so, it will not be long till Muskoka will be able to produce her own fruit and to spare.

The exhibition of grapes was good. The finest being Rogers' No. 15 (Agawam), grown by Rev. A. Dawson, of Gravenhurst, produced on vines one year from planting. He also showed some Concord, Clinton and Champions. All were grown not more than eighteen inches from the ground on a light soil, moderately enriched with rotted stable manure and lime.

Mr. Pickerell, of Macauley, J. P., had a fine display of Concord, Hartford Prolific, and some other sorts, grown about Bracebridge, where the soil is heavy clay, consequently the fruit did not ripen as early as if grown on lighter soil. I suspect that there had been a good deal of manure used to increase the vigor of the plants, hence the slowness in ripening.

Grapes for Muskoka should be planted on light land and not overlie rich; train low, and the result will be satisfactory. To intending purchasers of vines for Muskoka, I would specially recommend Agawam, Concord, Cham-

pion and Clinton. These can all be depended on to ripen, and are good enough for any family in the land. Vegetation being rapid in this district, the plants grow quickly, consequently the fruit is very fine, large, and absolutely free from insect depredations.

It being an established fact that fruit can be grown successfully and with profit, I would recommend every settler in this new country to make it a point to plant at least a few of the hardy varieties of apples and grapes, as soon as he has enough ground cleared to make a garden (never mind the stumps). Plant the trees, the stumps will be rotting out, while the trees will be growing up.

J. P. COCKBURN.

Gravenhurst.

WHAT OUR READERS SAY.

A SUGGESTION.

I am well pleased with the *Canadian Horticulturist*, and consider it good value for the one dollar, apart from the plant distribution.

It is certainly a great improvement having the annual reports bound. Trust you will continue to make improvements from year to year, until your paper shall rank first among all similar publications on this continent.

It is perhaps pertinent to add that any information you can give us with regard to Mr. Chas. Gibb's gleanings in Northern and Central Europe will be most acceptable to your subscribers residing in the colder portions of our Province.

Could you not have for one of the questions for discussion at your next meeting, "How to protect trees that are not quite hardy enough to withstand the rigour of our climate?"

Yours, &c.,

A. A. WRIGHT.

Benfrew, Ont.

THE BURNET GRAPE.

The Burnet grape bore well this season, some very good bunches which ripened fairly, notwithstanding the late spring. The grape also set its fruit better than last year. The vine is strong and vigorous, having much the character of growth of Rogers' hybrids. I am inclined to think that cultivated in localities where it will fully ripen, it will prove to be one of the Canadian wine grapes of the future. The entire freedom from musky flavor and the peculiarly fine acid flavor ought to produce a wine of higher quality than Clinton or Concord.

Yours, respectfully,

GEORGE ELLIOTT.

Guelph, Ont.

I express my surprise on reading an article in your October number by Mr. P. E. Bucke, of Ottawa, relative to the Burnet grape. I have always heard of that gentleman as most reliable, but after perusing the article referred to, my opinion is very much changed when I find him lauding up the Burnet grape to the skies, speaking of it as *a magnificent grape, and that for flavor and quality of fruit, it is the Queen of out-door black grapes.*

Now, I do not pretend to be an authority on grapes, but I do pretend to know a good grape when I taste it. I have made the grape especially my hobby for a great many years, and after having fruited the Burnet for several years have thrown it out as *worthless*. I had several varieties of Rogers and Hybrids growing alongside it which are far superior in every respect, as regards size of bunch and berry, flavor and of a far more vigorous growth. Some of my neighbors who were induced as well as myself in consequence of articles appearing in the *Horticulturist* to purchase it, are also of the same

opinion. It is impossible that any difference of climate can ever make it a grape deserving of cultivation. When Mr. Bucke shows me to the contrary I will then believe I may have been mistaken, but until then I shall consider it worthless. Can you tell me whether Mr. Bucke is interested in the propagation of this grape. *It looks very like it.*

I may, perhaps, trouble you sometimes with a few remarks, if you do not consider my strictures too severe, *magna est veritas et prevalebit.* I shall not mince matters. I should not have troubled you, had not Mr. Bucke invited criticism.

Very truly yours,

JAMES TAYLOR.

St. Catharines.

[Mr. P. E. Bucke is in no way interested in the sale or propagation of the Burnet grape vines. He is merely giving his impressions of the quality and character of the grape as grown in his own garden in Ottawa. Be charitable towards fellow-laborers in the field of fruit culture. These records of different experiences are exceedingly valuable. We do not get as many of them as we should. They are all needed to enable us to ascertain the true value of varieties not yet widely tested. We must not be too ready to impute selfish motives to those whose opinions and experiences differ from ours. They may be as honest as our own.—ED. CANADIAN HORTICULTURIST.]

TO PROTECT TREES FROM MICE.

SIR,—Seeing in the *Horticulturist* a correspondent enquiring for the best means to prevent mice from girdling fruit trees, as a fruit grower of over a 1,000 trees I give him my experience. One year I lost over 50 trees with mice, with the prospect of ultimately loosing the whole of them. I had seen

an account recommending old stove pipes, as well as other unwieldy substances. Only think of a 1,000 old stove pipes. So as a substitute for the stove pipes I bought roofing felt, and spread it on the lawn for a few days to partly dry it. I then cut it into strips the required size to lap round, and high enough to come to the top of the snow, tying it with two strings. This I replaced for two or three years, the same pieces having been taken care of. The consequence was I lost no more trees. Two I found where the felt did not quite meet at the bottom were barked at the opening, but nowhere else. The felt should be inserted a couple of inches in the ground.

J. McL.

Owen Sound, Dec. 4th, 1882.

ENGLISH GOOSEBERRIES WITHOUT MILDEW.

On page 124, *Canadian Horticulturist* for 1882, the standard sorts of English gooseberries are condemned as worthless on account of mildew, &c.; but on page 198, one kind is mentioned as being free from this defect.

Now of English standards I have only five bushes left, and for the last ten or twelve years every berry on every bush invariably mildewed, and what were gathered were picked unripe and very small, and not worth the trouble. Thanks however to your ably conducted Magazine, early last spring I saw a hint from one of your correspondents, proving that he had found the use of sulphur beneficial. I adopted the suggestion, and the consequence was that there was not one solitary berry upon which the slightest trace of mildew was to be found. The yield was exactly fifty quarts off the five bushes. The berries were remarkably large and clean, equally so with any I have ever seen in England, and attracted the notice of

our Arkona fruit growers, who thought such berries would command a ready sale at one-third better prices than Houghton or Downing.

The plan I adopted was, when the berries were about the size of a pea and beginning to mildew, to dust them lightly with sulphur, using about half a pound to the five bushes. At the first dusting the grass was growing very rank about the bushes. A few weeks later the operation was repeated with the same quantity, as rain had fallen in the meantime. I then removed the rank grass that there might be a freer circulation of air, but nothing more was done until gathering time.

I may say that Mr. B. Gott, of the Arkona Nurseries, saw the bushes about the time of the first dusting, and subsequently when the berries were about full size, but not ripe, and exclaimed, "We do not want a better berry!" It is at the suggestion of this very enthusiastic and intelligent fruit grower I communicate this, hoping some of your readers may secure for themselves *choice, large, clean and fine flavored* STANDARD ENGLISH GOOSEBERRIES.

Yours truly,

MARTIN WATTSON.

AMATEUR FRUIT AND VEGETABLE GROWERS.

TO THE EDITOR OF THE CANADIAN HORTICULTURIST.

There are many amateurs here and elsewhere who are continually trying their hand on horticulture. Their success never reaches the public, although much of their labors would greatly benefit the public. Here is one of them. A. S. Greenfield, who never ceases trying all sorts of grapes and vegetables, and often has them in great perfection. This year, one particular feature in his success is growing parsnips. Some of them measured eighteen inches around, two feet long, and weighing

five and one quarter pounds. They are the best I have ever seen. I would like to know if any one can beat him in this. He deserves notice in your *Horticulturist*.

N. ROBERTSON.

Government Grounds, Ottawa.

[We wish that our amateur friends would use the columns of the *Canadian Horticulturist* in telling what succeeds with them and what does not succeed. The information would be of great value to others.—ED.]

REPORT OF TREES AND PLANTS RECEIVED.

The Glass Seedling plum tree has borne a few very nice plums this year. They were ripe about the middle of September.

The Burnet grape vine grows very fast. It has not borne much fruit yet.

The Ontario apple tree grows well and was not much injured by blight this summer. It has not borne any fruit yet.

I planted about a peck of the Dempsey potato last spring, and this fall I dug about four bushels of very good potatoes from it.

The Moore's early grape vine has not grown much yet. I think it will live.

SANFORD WHITE.

FRUIT TREES IN MANITOBA.

MR. EDITOR,—I have been in the Northwest now for nearly two years, and am firmly in the belief that apples and plums can be raised here. The trees will require particular attention, and the order of planting reversed from the way it is done in Ontario. Here the black earth should be dug out and a poorer and a lighter soil thrown in, and the growth kept well back the first year. Apples and plums raised from seed will, I am sure, succeed. And

why not? Is it not as cold in Russia, Quebec, and the northern part of China, where the finest apples are raised? I shall try a few trees this spring on my farm, Township 7, Range 19 W., south of the Brandon hills, and hope to report success. Where the wild grape and wild hops grow so successfully and abundantly, surely the earlier kinds of cultivated grape will succeed; but it will take a few years, as all that is thought of now is as to who can do the greatest amount of breaking and get in the largest number of acres of crops.

Yours, &c.,

P. R. JARVIS.

Winnipeg, Nov. 21st, 1882.

EXPERIENCES AT CLINTON, ONT.

This has been a very unfruitful season in our quarter. Last winter with us the thermometer went down to 23 below zero, which was more than many of our fruit trees could bear and live. The unfavorable spring also did not make it any better. The white Spitzenburgs are killed out. Some Rhode Island Greenings, Twenty oz. Pippins, Devonshire and other Pearmains are all injured less or more; some are dead. Our *Famense* trees stood it well, but the fruit is badly spotted. Our Cayugas never showed a full leaf, but are living. Some of our Dutch Mignonne bore well, and never with us larger or finer fruit. We had a few White Doyenne, but they were knarly. Bartlett's about the size of the Dearborn's Seedling, and no good. We never had finer Madelines. We had a few Glout Morceaux as good as I ever saw them. Steven's Genesee very good. Oswego Beurra good. Van Mon's Leon Leclerk killed out; not much loss. Louise de Jersey very good.

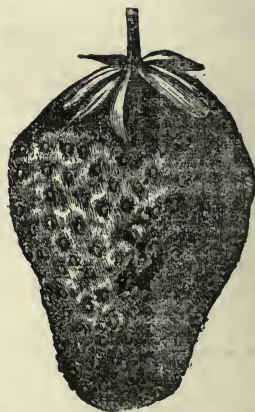
THOS. WIGGINGTON.

INTERNATIONAL EXHIBITION.

There is to be an international exhibition of animals connected with Agriculture, as horses, cattle, sheep, swine, bees, fish, poultry, and appliances, implements and machinery connected with the keeping, breeding, culture or employment of them, to be held in Hamburg in the German Empire, from the third to the eleventh of July, 1883. Articles for exhibition must be on the ground by ten o'clock of the second of July.

THE BIDWELL STRAWBERRY.

Mr. Roe writes to the *Rural New Yorker* that this strawberry has again surpassed everything on his place, and



BIDWELL.

took the lead at other places he had visited. He is receiving enthusiastic accounts of it from many parts of the country. A Maryland man writes to him that he is carrying to market fruit from his Bidwell plants, the berries being some of the finest that it has been his pleasure to see, and that he intends to plant it largely this season, as he finds the fruit bears transportation "splendidly," while the flavor and color are all that can be desired. Another writes that the Bidwell excelled all the varieties on his place, not only

in bearing, but the fruit was larger than that of any other variety except the Sharpless, and the carrying qualities are equal to those of any other sort. Mr. Roe expects the Bidwell will prove one of the leading varieties for the country at large.

CRIMSON BEAUTY RASPBERRY.

This new red raspberry is brought to the notice of the public by Mr. A. M.

Mr. Purdy says it is not a whit behind the Marlboro' in productiveness, tize, flavor, color, earliness and hardiness; that every red raspberry that has yet originated in the west has proved a success, and that he is confident he now has in the Crimson Beauty a red raspberry as large, productive and hardy as the Turner, but earlier and firmer. Surely if we keep on improving at this rate we shall soon have a perfect



CRIMSON BEAUTY.

Purdy, of Palmyra, N. Y., to whom we are indebted for the above cut. He procured it from Dr. Stayman, of Kansas, who writes to the *Fruit Recorder* that he has a "new red raspberry, better in quality than any other I know of, large size, bright scarlet, as hardy as the Turner, and better every way than that sort. It certainly is ahead of the Cuthbert and Superb, for I have fruited both of these and neither are of as good quality or color. It is earlier than the Turner, of a more pleasant, sprightly flavor, equally as hardy, more productive, and of much larger size and a bright scarlet color, and firmer. It is superior to any red raspberry I have ever seen or grown—not excepting the Superb, Lost Rubies, Reliance, Turner, or Cuthbert."

raspberry. It will be interesting to grow the Hansell and Scarlet Queen side by side and note the peculiarities of these two aspirants for public favor.

THE FORESTRY ASSOCIATION

OF THE PROVINCE OF QUEBEC, CANADA.

This association was formed on the 30th of September, 1882, with the Hon. Mr. Joly, President; Messrs. J. K. Ward and Massie, Vice-Presidents; Mr. Jos. Perrault, Recording Secretary; Mr. E. Barnard, Corresponding Secretary, and Mr. G. L. Marler, Treasurer, and a Council of sixteen. In Ontario, the Fruit Growers' Association of the Province is also its Forestry Association, this being also one of the subjects discussed at its meetings and which it is designed to promote.

THE FRUIT CROP OF 1882.

According to precedents the apple crop in Western New York, this year, ought to have been the largest ever grown. There were more apple trees of bearing age, it was the biennial bearing year, and more blossoms expanded upon the trees than were ever before known. Yet we do not hesitate to say that the crop of apples harvested, west of Cayuga Lake, was the smallest in proportion to the area of orchards ever known in this territory. We have heretofore discussed the probable cause, or causes of the failure, and will not now dwell upon that point. No other kind of fruit has resulted in such a complete failure, unless peaches did, and we think there was a larger yield of peaches in proportion to the area covered with trees, than of apples.

The strawberry crop was below an average. The diminution in yield may be attributed to several causes: The severe drouth of last year prevented that growth of plant last season, necessary to a maximum crop. The winter was so open and freezings and thawings so frequent, as to heave out and destroy a portion of the plants. Then the spring was so cold and backward that plants grew slowly and failed to form that basis of a crop of fruit which is indispensable. With all these drawbacks there was one favorable condition, viz.: moist weather during the fruiting season, thus making the most of the berries started. There was a plenty of berries for family supply, but the scarcity kept them too high for extensive canning by the factories. Those who were so fortunate as to have good crops must have made well by them.

Cherries were good in some localities, poor in others. They blossomed well, but in many localities the germs fell to the ground soon after the blossoms. Certain varieties of cherries, notably the Napoleon Bigarreau, are much

sought after for canning. A larger proportion of the crop than usual was saved, as, owing to the cool, dry weather they rotted less than usual. We allowed ours to retain their full growth and maturity, and we are confident the yield was a third more than if picked, as they usually are, when green.

Raspberries were a pretty good crop, but were reduced somewhat by the drouth. They were all taken at good prices, the evaporators preventing their running too low. Currants were nearly an average crop, but their value for canning and jelly is too well appreciated to allow much depreciation in prices.

The blackberry crop was one of the best ever raised, and met with the most ready sale at good prices. The mildness of last winter saved the canes of all varieties, and the scarcity of peaches made the demand for blackberries good.

Grapes, though late, have turned out a pretty good crop, the warm Oct. weather, and the postponement of frost bringing nearly all to maturity. We think more than double the number of pounds of grapes have been retailed, by Rochester grocers and confectioners, and consumed by our citizens than ever before, and we are glad to know that growers have received better prices. Retailers' margins have been smaller.

Plums have probably been the best crop of any tree fruit grown, and they have been largely canned. Quinces have also been a fair crop, and we have heard nothing of the prevalence of that fungus which alarmed so many quince orchardists last year. Pears were not an average crop, but in some localities the yield was fair. It was hardly the bearing year for pears, in this vicinity. Upon the whole, with the exception of apples and peaches, the fruit crop of Western New York has been but little below the average, but we can better afford to be short in all other fruits than apples.—*Rural Home.*

CUTTING SEED POTATOES.

Dr. Sturtevant's Address at Utica.

The third Evening Meeting at the State Fair was devoted to hearing and discussing an address by Director Sturtevant of the State Experiment Station, on the proper manner of cutting seed potatoes and planting them—substantially as below :

The speaker began by calling attention to the following points :—

1. A potato is covered with eyes, which form the origins of the shoots. When the whole potato is planted in its natural condition, only two, three, or very rarely four of these eyes vegetate. But rub and injure the eyes, or scald them slightly, and the number of the shoots is greatly increased ; 15 to 30 will start from each eye, and often one eye will give as many sprouts as the whole potato would naturally have done. Nature seems to work at a great waste in potatoes, as she does in corn-pollen.

2. The common opinion is that if the whole potato be planted, the strongest eyes will develop, the others remaining dormant. But who can tell which are the "strongest" eyes ? The fact is that if you plant a whole potato, and two or three shoots start, and you then rub off some of them, a great many more will appear to take their place.

3. If you injure the eyes a little more deeply than is necessary to multiply the number of shoots, by pouring on boiling water, just avoiding killing the eye, then a mass of little *tubers* (15 to 25) will form instead of the shoot—illustrating the fact that a single eye has the capacity of originating all the potatoes that a whole plant ought to be expected to bear.

4. The new tuber is always borne above the seed. Sometimes the latter (all but the skin) is completely absorbed by the growing plant ; sometimes you find it apparently almost unchanged.

Now the first absorption takes place *within definite lines* in the potato— which lines may be traced and studied by splitting the potato and soaking it in carmine water. It will be seen that

a line of vital tissue, resembling cambium, runs through the centre of the tuber, with a branch running to each eye, which fact is of the highest importance. Tubers may form anywhere on one of these vital lines ; the life of the potato is not confined to the eyes. This is strikingly shown by planting a whole potato with the eyes all destroyed, which will sometimes result in the formation of a new potato inside the old one, *without any vegetation whatever*, the old tuber shrinking as the new one grows. The practical lesson is : cut each eye deep to the centre, and at a certain definite angle to be ascertained by experiment, and you will get the maximum possible yield—best in quality also—from that eye.

Trials of this plan in the field this year at the Station resulted as follows : A hundred hills were planted in rows a foot apart. Where whole potatoes, or halves, or quarters, were planted, there was no sort of uniformity in the yield ; the crop of adjoining hills varied as much as three to one. But where single eyes were planted, cut as above described so as to preserve the axis of the eye, the product was surprisingly uniform in all the rows. In every case, the piece cut deep, however small, gave a much better yield and quality than a large piece cut shallow.

In regard to the planting of potatoes, Dr. S. early this spring started a number of eyes in sand in-doors, and grew them to three feet in height, but they formed no tubers. When, however, they were transferred to the soil, they began immediately to form tubers. He judges that it is necessary that the temperature of the earth should be lower than that of the air in order that a crop may be produced. He has tried high hilling—four to five feet. The result was few and very small tubers, because the plant had to do so much growing and digging.

Yet deep planting is sometimes advantageous, for the tubers need a certain degree of protection, and sometimes in light soil the potato inclines to come a little towards the surface. Perhaps it seeks warmth and dryness. In one experiment, the addition of six inches of sand to an extremely heavy clay soil, utterly unfit for potato-growing, produced an extraordinarily large and fine yield.

Essential conditions of success, then seem to be: 1. A single eye cut down to the central line; 2. Warmth and dryness for the growing tuber, but coolness and moisture for the roots. Proper cutting is the great point, everywhere and always. By this means the crop may be increased at least 25 per cent. over what it would be if the potatoes were cut in any other manner whatever; and there is great saving of seed besides.—*Country Gentleman*.

THE LILY OF THE VALLEY.

Convallaria majalis.

Since fashion has decreed that this long neglected, charming little spring flower, with its snowy, fragrance-spreading bells—"May-bells," as the Germans call them—shall be fashionable, an enormous impetus has been given to its cultivation. But this perfect emblem of purity and modesty of the floral world did not require the dictates of fashion to be held as a treasure by all true lovers of flowers since time immemorial, although to many a florist it may have brought, according to the language of flowers, a true "retour du bonheur."

The Lily of the Valley grows wild throughout Europe, in rich, damp woods, under the shade of deciduous trees. It succeeds splendidly in cultivation, if conditions similar to those under which it grows naturally are

provided, and its roots are not disturbed for several years.

In making new beds a partly-shaded situation should be selected, where the ground is not traversed by the roots of growing trees. Unless the soil is naturally rich and deep, it should be dug thoroughly to a depth of at least twelve inches, working in at the same time a good quantity of decomposed manure, and, if very heavy, some sand and leaf mould should be added. If old clumps are at hand, these should be divided before replanting; the roots sold in seed stores are generally already divided into single crowns or "pips," which is the technical name for them. These are usually set out in rows, about twelve inches apart and six inches in the rows. The crowns should be about two inches below the surface of the ground. They may be planted in the fall or spring, but most growers are in favor of fall planting, as at this season better plants may be obtained. When the ground freezes, a light coat of decayed manure and some mulching material should be scattered over the bed. During the first summer the rows should be hoed and kept free from weeds; afterward the plants will take possession of the entire ground.

Forcing Lilies of the Valley forms an important branch of floriculture near our large cities, and this art has reached so high a state of perfection that flower-spikes are now seen in florists' windows throughout the entire year. The roots used for forcing are nearly all imported from Germany, where immense quantities are grown at small cost. As soon as the "pips" arrive, which is during the month of November, they are placed closely together in shallow boxes, which are kept in cold frames, where they can be protected against severe freezing. After about four weeks those wanted for earliest blooming are removed to a



LILY OF THE VALLEY.

forcing-house with a temperature of about fifty degrees, which is gradually increased to eighty degrees.

For window and parlor culture Lilies

of the Valley may be forced as easily as any plants. The "pips" should be planted in pots at any time during November, six to eight to a five or six

inch pot. Ordinary potting soil should be used, and pressed firmly around the crowns, which should stand slightly above the surface. The pots have to be kept out-doors for a month or more, plunged in sand, and sufficiently protected to prevent their breaking by frost, although the plants themselves are rather benefited by being exposed to freezing weather, provided their crowns are covered with moss. About a month before they are expected to bloom they should be brought to a warm room, and gradually watered more copiously, as they grow.—*American Garden.*

THE MARLBORO' RASPBERRY.

This new raspberry is now causing so much excitement among fruit growers in the Southern Ulster fruit section, by reason of its unusual promise, that I have been led to make a careful examination as to its origin, habits, and meritorious claims to public favor.

Late last week I attended a raspberry exhibition in the little village of Highland, on the Hudson, which is now one of the great small fruit centres of the Hudson River Valley. I there found a fair show of the leading varieties of this fruit which has netted so many thousands of dollars to Ulster County fruit-growers in years past. Here was the new "Marlboro'," not only a full supply of the fruit, but also the large canes of a growing hill in full fruitage, which had been cut from the ground and transported eight miles to the fair. The fruit was certainly the finest I ever saw—fine flavored, very large, firm, bright scarlet in color, and beautiful. The immense canes were loaded to the very tips. Three of the berries weighed half an ounce in the scales of an apothecary below the hall. Mr. A. J. Caywood, the originator, who exhibited the fruit was, of course, very enthusiastic in its praise, and freely invited parties to

visit him at Marlboro', and see the raspberry growing. Such an invitation I accepted, preferring to satisfy myself in that way.

ORIGIN OF THE MARLBORO'.—Mr. Caywood says he has been experimenting with the view of improving the red raspberry for over 20 years. He has labored to produce first of all an entirely hardy variety: then large size, fine appearance, and earliness of ripening. During these years he has obtained six generations of the raspberry. His first cross was that of the Hudson River Antwerp on the old English Globe variety. He confined his efforts to the stock so obtained with the exception of admitting in the line, on one cross, the Button Raspberry. From his sixth and last cross, which was the Highland Hardy, the Marlboro' was produced.

POINTS CLAIMED FOR IT.—First he claims perfect hardiness. The canes have never been protected in his ground, and he says not a bud has ever been injured, but the fruit is produced at the very tip. It is also the earliest and latest red raspberry they have, he says, commencing early and continuing long in fruit; it ripened last year on June 15th, and was in fruit for two months. This year by reason of the backwardness of the season, it ripened June 20th. The valuable feature of holding the fruit two or three days after ripening, is also claimed. Unusual vigor of canes, great productiveness, large size and superior market qualities are other important features set forth by the originator.

WHAT I SAW OF THE MARLBORO'.—It was growing in the hills in what seemed to be good clay loam. The canes were immense, measuring from seven to eleven feet in height. Each hill was a perfect pyramid of luxuriant dark green foliage, heavily laden with fruit in all stages of growth, from the

large scarlet berries to the expanded blossoms. The fruit arms were over two feet long, and fruited all along, some having eight clusters of fruit each. The canes were fruited to the terminal bud. I confess it was a most attractive sight to any fruit grower, and the visitors were most enthusiastic in its praise. Mr. Nathaniel Hallock who first began the raspberry business on the Hudson nearly forty years ago, and who is now over eighty years of age, said this show of fruit exceeded anything he had ever seen of the Hudson River Antwerp in its best days. He said if the berries would grow like that an acre of them would produce about \$2,000 in a single year. Another gentleman who was present, was afterwards seen in earnest conversation aside with the originator; and Mr. Caywood afterward informed me that he had been persuaded to put his price upon his stock of the Marlboro Raspberry, and had given the gentleman the first refusal. Of course, it has never yet been disseminated.—H. HENDRICKS, in *Rural New Yorker*.

The Editor adds:—From what we have seen and known of this splendid variety, we freely subscribe to the above. But it must be borne in mind, that it has not been tested away from the favorable place of its origin.

PARSNIPS.

One of the greatest pleasures the proprietor of a garden has, is the satisfaction of knowing that he has at his command an abundant and varied supply of vegetables at all seasons of the year. In the summer he has an extensive list to choose from, but in the winter and early spring months his choice is confined to a limited number of varieties, and on this account these crops should be of the very first quality. To obtain this desired object it is absolutely necessary

to give the crops, during their season of growth, every essential attention.

The Parsnip is one of the most desirable, as well as most wholesome, of winter and spring vegetables, and should be cultivated in all gardens, however small. It flourishes best, and produces the largest, longest and smoothest roots when grown quickly, in a very rich, deep soil, for, if fresh manure is given, the roots will become forked; or, if the seeds are sown in a shallow or poor soil, the roots will be of small size, tough, forked, and almost worthless.

The best and easiest method of obtaining a satisfactory crop is to prepare the ground thoroughly the previous season. This should be done by plowing or digging the ground very deep, and at the same time working in an abundance of well decomposed stable manure in which a quantity of bone-dust has been mixed. If at all possible, let the ground be thrown up in ridges throughout the winter, and as soon as the ground is in working condition in the spring, a good sprinkling of guano, or hen manure should be given, the ground neatly leveled, and the seed sown in drills from eighteen inches to two feet apart. The seed should be covered to the depth of three-quarters of an inch, and as soon as the young plants are from three to four inches in height they should be thinned out to a distance of six or eight inches apart. All the care and attention they require after this is to be well cultivated and kept free from weeds at all times.

The roots are perfectly hardy, and are very much improved by leaving them in the ground during the winter, care being taken to bring enough in the cellar to last during the cold weather. The roots require to be covered with sand when placed in the cellar, thus preventing them from becoming dry. One ounce of seed will sow

about one hundred and fifty feet of row, and, as the seed is thin and scale-like, it will not retain its vitality for over a year. The most desirable varieties are:

Early Short Round French, a very early variety, of small size, round shape, and delicate flavor.

Long Smooth, or *Hollow Crown*, has long, smooth roots, both tender and sugary; the tops are small, and tinged with red at the crown, which rises from the centre with a slight depression.

The Student is a new variety, of delicious flavour, the roots being of very regular form with white, smooth skin. This is the best variety for general cultivation.

In attempting the cultivation of Parsnips it is well to remember the fact that the seeds vegetate slowly, and on this account they should be sown as early in the spring as possible.—CHAS. E. PARNELL, in *American Garden*.

VIOLETS.

There is no more popular flower than the Violet, and as it is one that can be enjoyed by all with very little labor, while the expense is not to be thought of, we are often surprised at its absence in many households. It is one of the earliest to bloom; in fact, it can be enjoyed almost throughout the entire year; and is so hardy that it requires very little protection. At most a cold frame, covered in winter with straw matting, which a bundle of straw will supply, will be sufficient to give us flowers in the latter part of March, when the plants, which have been increasing, should be partly removed and set in the open ground. A portion of these may be let remain out all winter, well covered with manure, to be uncovered early in March. It is also one of the prettiest and most welcome house-flowers, being planted in a suitable wooden box and

placed in a cool part of a room, and aired occasionally by being set in the sun at a window in the room in which there is no fire, and allow the sash to be raised for an hour at mid-day when the weather is not too severe. There was very little intermission the last fall, winter and spring, in which we could not gather a little bouquet of Violets for our parlor.—*Germantown Telegraph*.

THE TYLER BLACK-CAP.

Among all the new candidates for public favor this raspberry is, I think, one of the most valuable that has yet been introduced. It is a Black-Cap, originating in this State, and has been quietly planted and grown here for a number of years past. One large fruit grower near has several acres of it in bearing, claiming that it is by far the most profitable sort he can raise, and several others have planted it almost exclusively the past year or two. One of its chief points of value lies in its earliness, it being as early or earlier than either Doolittle or Davidson's Thornless. It will average as large or larger than Mammoth Cluster, in fact, I have seen many of its berries as large as the largest Gregg I ever saw. It is the handsomest jet black berry I have ever seen, there being scarcely a trace of bloom on them, while the seeds are remarkably small and few in number. Although exceedingly firm the berry is not dry or hard, but juicy and of very fine quality. It is a strong, vigorous, healthy plant, and enormously productive. In a test of six rows each of Davidson's Thornless and Tyler, planted at the same time and each receiving exactly the same treatment, there were picked from the former six rows, one bushel and two quarts, and from the Tyler exactly six bushels, or one bushel to the row. This was on the ground of a neighboring fruit grower who, in his



TYLER RASPBERRY.

enthusiasm, is about to uproot a fine young plantation of other varieties and replant with Tyler. In the Auburn markets it commands an average of three cents per quart more than other varieties on account of its quality and handsome appearance. I think it is by far the best berry of its season and effectually displaces the Doolittle and Thornless, thus supplying a long felt want, and I have no doubt that as soon as it becomes better known it will be planted more extensively than any other, and I see no reason why its merits should not be made known, as were those of many inferior sorts that are now being puffed and lauded through the country. The Gregg, our best late sort, commences to ripen at about the last picking of Tyler, and thus by planting these two varieties the season may be greatly prolonged, while I believe that two more profitable sorts can not be

grown.—J. E. BURR, in the *Indiana Farmer*.

Mr. Tyler, speaks of his child thus:—

"It was larger than Davison's Thornless, averaging about the size of Mammoth Cluster, and that he had raised specimens of it that were larger than any Mammoth Cluster he had ever seen; it is the most regular in shape and uniform in size of any berry he had ever seen; jet black in color with very little bloom; in quality pronounced by all who have tasted them to be far superior to either Doolittle, Davison's Thornless, Seneca, or Mammoth Cluster; ripens fully as early or earlier than Davison's Thornless, and continues in bearing till two or three weeks after Mammoth Cluster is all gone and gives to the last not a few scattering berries, but good picking. In a comparative test of the same number of plants each of Davison's Thornless, and Tyler, all growing side by side, of same age, under the same cultivation, and all having an equal chance, he picked 34 baskets of Davison's Thornless, and 198 baskets of the Tyler."

EXPORT TRADE IN APPLES.

It is noticeable that the export shipments of apples from New York have been larger of late than from Boston, which is the reverse of what they have been in former seasons. The total export shipments from New York for the season were 51,248 barrels; from Boston the total exports thus far this season have been 35,562 barrels. The total exports from Boston and New York this season have been 86,811 barrels. Baldwins and Hubbardstons averaged twenty shillings and sixpence; actual net to shippers, \$3.30 per barrel. The freight on apples from Boston to Liverpool has declined to seventy-five cents per barrel. Apples can be shipped to London via Liverpool at about thirty-seven cents per barrel extra. In the Glasgow market there have been no sales of Boston apples.

A cable despatch from Liverpool on Monday last announces the sale of 4000 barrels of American apples at advanced prices, as follows: Kings, 22 to 25 shillings per barrel (the English shilling being about 25 cents our currency); Baldwins, 17 to 20 shillings; Northern Spy, 15 to 20 shillings; Roxbury Russets, 16 to 18 shillings; Greenings, 14 to 16 shillings. A very active demand is reported in Liverpool at these prices. Up to the present time the European market for American apples has been mainly confined to Great Britain, but if the opinion of our Minister to Sweden, Mr. J. L. Stevens, is correct, there seems to be an opening for them in northern Europe, where no good apples can be grown, as is the case in Denmark, Sweden and Norway. The few that find their way to these countries are mostly from France, and are to be found only in the larger cities, where they are sold for an average of six cents each. Mr. Stevens thinks that the keeping qualities of some American apples, and their adaptation for trans-

portation, as well as the fact that they are of better flavor than any now found there, make them admirably adapted for the markets of northern Europe. The journey is longer than to England, but the prospective price is greater.—*American Cultivator*.

CARE OF HONEY LOCUST HEDGES.

In the northern sections, where the Osage Orange is more or less injured by the winter, the Honey Locust is undoubtedly the most valuable plant for hedging purposes. There is no special culture necessary for it more than is required for other species, but it needs attention for the first two or three years to form a thick base. The young hedge should be frequently cultivated, and kept clear of grass and weeds all summer, otherwise mice will harbor therein and bark the young plants. In trimming, cut well back for the first two or three years, bearing in mind there is no difficulty in quickly obtaining the desired height, but it is far more troublesome to induce it to become dense and twiggy.

The best results are obtained from running one strand, or, better still, two strands, of barbed wire along the middle of the hedge, thus preventing the inroads of unruly animals and that bane of the honest orchardist, boys with thieving propensities.

To start at the commencement, Honey Locust seeds should be collected in the pods as they fall from the trees in autumn, and placed in a cold, exposed position until hard, freezing weather, when they can readily be threshed like beans. After cleaning the seeds from the fragments of pods, etc., place in bags and preserve dry until spring. At planting-time soak the seeds in warm water until they show signs of germination, when they should be sown in drills like peas, in good, thoroughly pulverized soil.

Like the larger portion of our native trees, this species forms more root than top the first year, consequently one-year seedlings are usually rather small for planting in the hedge-row; but they should not remain longer than two years, else they will be on the other extreme.—JOSIAH HOOPES, in *N. Y. Tribune*.

BOOK NOTICES.

VICK'S FLORAL GUIDE for 1883 is an elegant annual, most tastefully got up, and profusely and beautifully illustrated, not only with engravings without number, but also with three colored plates, which are just perfect gems. It is not merely a catalogue of seeds and articles which the publishers have for sale, but is also a guide to the cultivation of them as well. You can obtain a copy of this most instructive work for ten cents by addressing James Vick, Rochester, N.Y.

THE AMERICAN AGRICULTURIST celebrates its forty-second year with new dress, new artists, new writers, and radical improvements generally. During the year 1883, every number of this leading Agricultural Journal will contain nearly one hundred columns of original reading matter, and from fifty to eighty original illustrations and engravings. Notwithstanding this great amount of reading matter, it is supplied at the low rate of \$1.50 a year. 200,000 copies of the October issue were published. See advertisement elsewhere. Send for a sample copy.

THE TWENTY-FIFTH EDITION of the Descriptive Catalogue of Ornamental Trees, Shrubs, &c., of Ellwanger & Barry, Rochester, N.Y., is handsomely illustrated with a finely executed Chromo-lithograph of the *Weigela candida*, and with numerous engravings, shewing the peculiarities of form of leaf, tree and flower of a great number

of our most interesting trees and shrubs and perennial plants. It is a valuable work of reference, giving accurate descriptions of a great variety of deciduous and evergreen trees and shrubs, most of which are hardy in our Canadian climate, bringing to our notice those of recent introduction and those possessing any marked peculiarity in form or color of foliage or habit of growth.

THE CANADIAN ENTOMOLOGIST is closing its Fifteenth Volume under the supervision of the President of the Entomological Society of Canada, Prof. Wm. Saunders, of London, Ont., who has so ably edited it during all these years of its history. This monthly organ, in connection with the annual report of the society, has done a great deal in the way of disseminating information concerning the life history of insects injurious or beneficial to the tiller of the soil, and concerning the methods of preventing the attacks of injurious insects, or of destroying them in the early stages of their existence, and thereby preventing their ravages. The December number for 1882 has not yet come to hand, possibly the hibernating habits of many of the creatures of which it treats has an effect upon the development of the winter numbers.

THE MARYLAND FARMER, at the commencement of the new year, presents its readers with a portrait of the Hon. Oden Bowie, one time Governor of Maryland, known as an extensive farmer, planter and stock-breeder, whose homestead farm contains nearly a thousand acres, in each field of which he has left from six to ten acres of woodland. The Farmer is published monthly, under the care of Ezra Whitman, Baltimore, Maryland, and now enters upon its twentieth volume, the oldest agricultural journal in the State. It is,

we regret to say, not very full of information relating to fruit growing in that State, and judging from some of the communications published, its constituents are not as well informed on these matters as they might be. For example, in the January number for 1883, now before us, page 10, the writer speaks of the Delaware as "an excellent *white* grape, *but not at all hardy*." Now the Delaware is a red grape, and perfectly hardy in our Canadian climate where the thermometer falls below zero. Such blunders throw an uncertainty over the whole communication, and one doubts whether the writer is correct in the names of the other fruits he mentions. Again, on the same page, the Cherry Currant is spoken of as a new berry, developed in the Mount Hope Nurseries. Now the truth is that this currant was introduced from France, and has been in cultivation in America somewhere about a quarter of a century. If this be a new fruit in Maryland, surely horticulture must be in a very backward condition. Friend Whitman must pay a little more attention to these matters in his excellent journal, and not leave horticulture so far in the back ground.

HIRAM SIBLEY & Co.'s SEED CATALOGUE, for 1883, Rochester, N.Y., and Chicago, Ill., is copiously illustrated with admirable engravings, and five plates, each containing twelve colored pictures of vegetables, plants or flowers. It is full of information respecting the culture of the different plants and their several qualities. This firm are very extensive growers of seeds, the most extensive in America, and probably in the world, and have a reputation for great painstaking in the quality of their seeds.

THE AMERICAN JOURNAL OF FORESTRY is a new venture under the editorial care of Dr. F. B. Hough,

chief of the forestry division of the United States department of Agriculture. It is devoted to the interests of forest tree planting, the formation and care of woodlands and ornamental plantations, and the various economies concerned therein, and published by Robert Clarke & Co., Cincinnati, Ohio, at *three dollars per annum*. There is much for us to learn upon these subjects. We cannot blindly follow the practices of the old world, our climate and circumstances and the genius of the people are so very different, that what is wise there might be very unwise here or even quite impracticable. It is certain, however, that in some parts of the country we have cleared up too large a proportion of the land for the best interests of the population, from both a sanitary and an economical point of view; and in other parts we are thoughtlessly cutting down our forests in a manner very detrimental to the future welfare and prosperity of the country, and every effort to disseminate information upon these subjects deserves to be encouraged.

THE GARDENER'S MONTHLY, now in its twenty-fifth volume, is still under the able editorship of Mr. Thomas Meehan, and is published by C. H. Marot, 814 Chestnut St., Philadelphia, at \$2.10 per annum, postage paid. It is not needful that we say anything of the reliable character of this magazine to those who have been in the habit of reading it, and to those who are not acquainted with it we unhesitatingly say that, if you are interested in horticultural matters, the best thing you can do is to subscribe for it and read it with care.

REPORT OF THE STATE HORTICULTURAL ASSOCIATION OF PENNSYLVANIA, for 1882. It is illustrated with engravings of Pennsylvanian seedling fruits, as Pyle's Red Winter Apple, a chance

seedling which is thought to be of great value as a market variety, being large, showy, and keeping until March; York Stripe Apple, a popular variety in southern Pennsylvania; Triumph of Cumberland Cherry, which originated in Cumberland County, and said to be of fine delicious flavor, a prolific bearer and to rank with the best. It contains an essay on "The management of an orchard," on "Horticulture for pleasure," on "Raising seedling fruits," on "Our winged friends," on "Horticultural fertilizers," "Fruits and vegetables," &c. Mr. E. B. Engle, Chambersburg, Penn., is the obliging Secretary, to whom those interested can apply for a copy if they wish, enclosing stamps to pay postage.

THE YOUNG SCIENTIST enters upon its sixth volume. It is published at 49 Maiden Lane, New York, at one dollar per year, and is a praiseworthy effort to interest young people in something more profitable than the flashy and sensational stories with which our young people are now so abundantly supplied. It is very gratifying to see it enter upon its sixth year with such hopeful courage, materially enlarged in size, more than doubled, and well illustrated. It is also a hopeful sign of the times that such a journal, without any "stories" whatever, is sufficiently appreciated to warrant increased expenditure of time and money in its monthly preparation.

OTTAWA FIELD NATURALIST'S CLUB. We are indebted to Lt.-Col. Wm. White for a copy of the second issue of the transactions of this Club. It contains valuable papers on subjects connected with the researches of the naturalist, among these we notice an interesting one on "Meteors and Meteorites," by Mr. H. B. Small; one on "Some Coleoptera injurious to our pines," by Mr. W. Hague Harrington; another

on the "Liliacæ," by Lt.-Col. Wm. White; a synopsis of a lecture by Prof. J. Macoun, F.L.S., on "the capabilities of the Prairie Lands of the great Northwest, as shewn by their Fauna and Flora." The concluding paper, illustrated by a well executed plate, is a "description of a new species of Porocrinus," by James Grant, M.D., which was taken from the Trenton limestone at Belleville.

VICK'S ILLUSTRATED MONTHLY magazine continues to illumine our table with its bright pictures and interesting articles on flowers and their culture. The initial number of the sixth volume is as delightful as any that have gone before, and we particularly commend the article on "Flowers for the Schools" to the consideration of our Boards of Public School Trustees, especially in our rural school districts. If there be one place more than another that should wear a bright and cheerful aspect, it is the school grounds; and yet, so far as the writer's observation extends, the school yards in Ontario are the most dreary, forsaken and cheerless enclosures to be found anywhere. We almost forgot to say that the magazine is published by James Vick, Rochester, N.Y., at \$1.25 per year.

THE FARMER'S ANNUAL HAND-BOOK, for 1883, published by D. Appleton & Co., 5 Bond Street, New York, is a most convenient and useful little diary for the year, containing also many things useful to the farmer, such as tables of the cubic contents of round sticks, rules for finding the number of tons of hay in a mow, the number of bushels of corn in a crib, &c.; the average purity and vitality of some seeds as found in market, valuation of commercial fertilizers, average composition of fertilizing materials, feeding of cattle, composition of feeding stuffs, and the digestibility of feeding stuffs, &c.

A LEAF FROM THE CALENDAR.

BY WILLIAM M. BRIGGS.

Where Wood-Violets love to grow
Thickly lies the winter's snow;
Where the streamlet sung and danced,
And the summer sunbeam glanced
Thro' the meadow, down the dale,
All is chilled, and chill, and pale!

Where the Crow-foot's tender green
Earliest in the spring is seen;
Where the Checkerberries hide
By the pale Arbutus' side,
And the Cowslips, tipped with gold,
Over hill and dale unfold;

Where the ferret, soft and brown,
Stores his nest with pilfered down;
And the field-mouse in the heather
Sleeps for weeks and months together;
And the squirrel, wise and dumb,
Waits for better days to come;

Lies the winter—bitter, strong—
Heaped thro' freezing nights and long;
While the tempest comes and goes,
Sliding swift o'er drifted snows;
Clouds above and gloom below;
Tell me—when will winter go?

When the buds begin to swell;
When the streams leap thro' the dell
When the swallows dip and fly,
Wheeling, circling, thro' the sky;
When the Violet bids the Rose
Waken from its long repose;

When the gnats in sunshine dance;
When the long, bright beams advance;
When the robin by the door
Sings as ne'er he sang before;
Then, when heart, and flower, and wing
Leap and laugh—then comes the spring!

Scribner's.

BEST TIME FOR CUTTING SORGHUM CANE.—Peter Collier, chemist to the Department of Agriculture, writes a letter to the *Husbandman*, to show that the advice to farmers to cut sorghum cane when the seed is in the dough and several days ahead of grinding, is very bad advice indeed.

WATERLOO PEACH.—This is the *largest very early* peach we have grown or seen. The first specimen ripened July 14th, and measured 10 inches in circumference. All the fruit was gathered, and mostly over-ripe, on the 19th of the same month. It ripened about three days in advance of the Alexander. It is a remarkable keeper, ripe specimens having been kept in perfect condition nearly a week after being picked. It will therefore be valuable for shipping.—*Fruit Recorder*.

PROTECTING BELTS IN ORCHARDS.—The *Rural Home* in describing a visit to the orchards of T. G. Yeomans, of Walworth N. Y. (widely known as a very successful fruit raiser), states that he has protecting belts of

Norway spruce running north and south every thirty or forty rods. These belts break the force of the winds, and save the ripening fruit. A furious wind storm once swept over one of his orchards (of forty acres) and he sent a number of men to pick up the wind-falls for evaporating. They soon returned with very little fruit, the evergreen screens having afforded ample protection.

THE BARK LOUSE.—Herbert Osborn, of the Iowa Agricultural College, recommends as remedies for the scurvy bark louse and the oyster shell louse, kerosene and soap. The kerosene may be used pure where it can be done with safety, but ordinarily it must be diluted with water. This may be accomplished by forming an emulsion of kerosene and milk (skimmed milk answers well) and then diluting with about an equal quantity of water, or by shaking up a mixture of milk kerosene and water in equal parts, and then adding more water, taking care not to add so much as to cause the mixture to separate. Sprinkle or spray it upon the infested twigs and branches. Soap is an excellent remedy. Make a solution of whale oil soap, one-fourth of a pound of soap to a gallon of water, and apply to the infested parts of the tree, repeating the application after a few days. Lye is said to have been used with good success, but is considered unequal to soap.—*Michigan Farmer*.

THE DUNLAP AND GENESEE—TWO NEW SEEDLING PEACHES.—Through the courtesy of our horticultural friend, Mr. Charles A. Green, we had the pleasure of testing two new seedling peaches. The Dunlap is one of those yellow peaches, like the yellow Alberge, Hill's Chili, Wager and others which reproduce themselves, or very nearly do, from pits. It is a very handsome, round, bright yellow peach, of medium size, deep yellow flesh, and of a sweet, juicy, delicious flavor. The pit is very small, and perfectly free. We cannot recall another peach ripening so late as this of such good quality. The Genesee came from the grounds of Mr. H. E. Hooker, nurseryman, of this city. It originated on a city lot belonging to the late brother of Mr. Green, and the tree from which the specimen was obtained was heavily loaded with fruit. It is a large, oblong peach, in form and color resembling the Early Crawford; a shade lighter color; and resembling it very much, we thought, in quality. Judging from a single specimen of each, they seem to be promising varieties, worthy of farther trial.—*American Rural Home*.

1000
1000
1000

THE
GARDEN
OF
EDMUND



EARLY CANADA.

THE Canadian Horticulturist.

VOL. VI.]

MARCH, 1883.

[No. 3.]

STRAWBERRIES.

Some one has quaintly said that doubtless God could have created a better fruit than the strawberry but he did not, and we believe the sentiment is very generally accepted by most of the fruit consuming public. They ripen at a time when we crave their acidulated juices, which are so pleasantly flavored and delightfully perfumed, and withal put up in such beautifully tinted parcels that every sense is gratified. Besides the fruit is so easily grown that even the tenant of a few square yards of ground can have his strawberries fresh from the beds near his door, and in such abundance as to supply his table at every meal for at least a month in early summer.

Besides all this gratification of taste and sense, this fruit is valuable as a mere article of food. It is healthful diet, corrective of biliousness, and a valuable substitute for at least a portion of the animal food which we use in more than sufficient quantity. It is capable of supplying the waste occasioned by continuous and even severe labor to a much greater degree than we are wont to suppose. Were it used much more freely, and as a substitute to some considerable extent for the

heavier and more oleaginous food which is so commonly found on our tables, we should doubtless find that we were gainers by the change.

Three species of strawberry are mentioned in Gray's manual as found growing in America. Of these the *Indica* is hardly regarded as a true strawberry, and is an escape from cultivation, found in the vicinity of Philadelphia and southward. It has yellow flowers and leafy runners, and the fruit is insipid. The *Vesca* is the well known Alpine species, indigenous both to Europe and America. The seeds are not sunken in pits, and some of the varieties do not produce runners. The *Virginiana* is found growing wild from Florida to the Arctic regions, and westward to the Rocky Mountains. It is the most valuable of all the species, and is the parent of most of our cultivated varieties. It is more hardy, adapting itself to a greater variety of soil and climate than either of the others, or than even its congener, known as *Chilensis*, from having been introduced into Europe from Chili, though it is found growing wild on the Pacific slope of both continents. Hence it is that we find the *Wilson*, which is a descendant from the

Virginian strawberry, has been able to establish itself over such a vast extent of country (see Vol. I. of the *Canadian Horticulturist*), while the Jucunda can be grown in perfection only with careful cultivation, and that only upon peculiar soils and in favorable locations. Hence our hybridists, when experimenting with the strawberry, will need to bear these facts in mind.

In general, the soil best suited to the successful cultivation of strawberries is a rich, friable loam, that is well drained, yet retentive of moisture. If there be one thing essential to the securing of a fine crop of this fruit more than another, it is an abundant supply of moisture in the soil. This does not mean a wet soil, but quite the contrary. A wet soil will bake and become hard and very dry when the weather is hot and dry, and this is very injurious, and may be ruinous to the crop. If the garden is not naturally friable, it should be made so by thorough drainage, and kept so by proper tillage. If the strawberry bed can be thoroughly watered in very dry seasons, the result will be highly beneficial, as will be seen in the increased size and quantity of the fruit, and vigor of the plants. Mulching the surface with the clippings of the lawn or short grass cut from the fence corners will often prove a very valuable treatment.

The cultivation consists mainly in keeping the ground free from weeds and the surface loose and in a friable condition. Three systems are in vogue, known as the "matted row," the "hill,"

and the "narrow row" systems. In the matted row system as soon as the runners push out vigorously the cultivator is narrowed down to about eighteen inches and run up one row and down another, so as to draw the runners always in one direction, that they may not become tangled and broken. In this way the row of plants becomes widened, and a narrow strip is left for cultivation and for passing between the rows when gathering the fruit. Under this system usually two crops only of fruit are taken and then the plants are plowed under, another plantation having been set to fill the place of the one abandoned. In the hill system the plants are set out so that the cultivator can be run both ways, as in cultivating corn, the runners are cut off, and the plants only increase in size by stooling. In the narrow row system the cultivator run only one way, up and down, the runners are cut off, and the plants having been set out only a foot apart soon spread so as to form a continuous row. In garden culture the hill system will usually give the best results in size and flavor of fruit. In field culture one of the other systems is usually the most convenient and least expensive.

As to varieties, what shall we say? Each year some new claimants for popular favor are brought forward, of which one can only say,

"The last still loveliest; till 'tis gone,
And all is gray."

There seems to be no way left for us but to test each variety, as long as our patience holds out to plant them, and

decide each for himself which sorts he will continue to grow. Doubtless hundreds have been brought forward that were to supersede the Wilson, and yet to-day the Wilson in the hands of most cultivators is the most profitable variety grown.

Our colored illustration this month presents to our readers an early ripening sort of the Wilson type. It was raised by Mr. A. M. Smith, when he resided at Drummondville, and has been named by him the Early Canada. The illustration is a reproduction in colors of a drawing taken from nature, and is a very accurate representation of the fruit. It ripens about a week earlier than the Wilson, under the same conditions; is about as productive, as good a shipper, and much the same in quality and size.

CORRESPONDENCE.

MUSHROOM CULTURE.

MR. EDITOR,—Please inform me how to grow mushrooms with success through the *Canadian Horticulturist* and oblige,

Yours truly, H. B. L.

Toronto.

To grow mushrooms with success our correspondent will need to add to his knowledge, patience; and to patience, experience. In all the extent of vegetable culture there is not another that so mocks our skill and sets at defiance all our knowledge. Instead of yielding returns in from four to six weeks, according to our well founded expectations, it may be as many months before the much-wished for crop appears.

The first requisite is the material for the mushroom bed. Fresh horse drop-

pings are procured from the stables every morning, and spread out to dry, where they are frequently turned over to dry and to prevent heating. It is of first importance to get the dung into proper condition, not so wet as to produce violent fermentation, nor so dry as not to ferment, but of that degree of moisture that will secure a nice, gentle heat.

The second requisite is a suitable place in which to prepare the bed. This should be where the temperature will not fall below fifty degrees of Fahrenheit, nor rise above sixty. If the room can be kept dark, so much the better, and the atmosphere never allowed to become dry. On this account many prefer a cellar having a dry bottom.

The third requisite is a properly prepared bed. This is made by placing first a layer of the dung, which has been collected and prepared for this purpose, laid regularly and evenly to the depth of five or six inches, and beaten hard as it is laid down, then in the same manner adding layer after layer until the bed is from a foot to eighteen inches deep. Now plunge a thermometer into the bed and watch the temperature. It should not rise higher than 110°; it may be that it will not rise above 100°. Gradually the heat will decline, and when it has fallen to 80°, the spawn should be planted. This you will procure of any of our large dealers in seeds. The bricks of spawn should be broken into pieces about the size of a hen's egg, and these inserted into holes made in the bed about nine inches apart and two inches deep, which should be closed again, and the whole beaten down firm. About a week or ten days after cover the bed with an inch and a half of light turfy soil, neither wet nor dry, but just moist enough to firm readily when beaten down with the back of the spade. To prevent evaporation cover the bed

to the depth of six inches with dry, clean hay.

And now little can be done but wait for the mushrooms to appear, which may be expected in about six weeks. When they begin to appear a nice moist atmosphere should be maintained. Some do this by sprinkling tepid water on the hay covering from a very fine rose, just sufficient to moisten it, as it by a heavy autumnal dew; while others distribute pans of water sufficient to keep up the requisite degree of moisture by evaporation from the pans. When a considerable crop of mushrooms has been harvested, and the bed shews symptoms of exhaustion, a good watering with tepid water, just once applied, will start the mushrooms again, and in this manner the bed may be kept yielding mushrooms for about three months.

TO THE EDITOR OF THE CANADIAN HORTICULTURIST.

Will you be so good as to inform us in next *Horticulturist* as to which strawberries combine *productiveness, sweetness and fitness for growing in heavy clay soil.*

I have a Concord grape, ten years old, which neither grows nor fruits (does not cover four feet of trellis), while Salem and Creveling either side grow luxuriantly and fruit reasonably well. What is the matter? Had I not better dig it out? And will it do to replant another grape in the same spot?

As elsewhere, apples were a short crop in this region last season. But *Russets* and *Baldwins* stood out conspicuous for full bearing amid otherwise scantily fruiting orchards.

RUSTIC.

Goderich, Feb. 3, 1883.

REPLY.—You will find Charles Downing, Triumph de Grand, President Wilder, Jucunda, Forest Rose, Sharp-

less and Springdale to thrive on rich clay loam. Surely among these you will find some that will suit your taste for sweetness.

There is surely something wrong at the root of your Concord vine. Dig it up and see what you can find. It may be the soil is not suitable, or insects are preying on the root. You might try the vine in another spot, and see if it will do any better; this more as a matter of curiosity than profit, for a young healthy vine will be worth more than this stunted plant. Yes, try another variety in the place where the Concord now stands, and see how it will behave.—Ed. *Can. Hort.*

THE CURRANT-WORM.

TO THE EDITOR OF THE CANADIAN HORTICULTURIST :

I notice the remedy recommended in your January number for the cabbage-worm pest, and mean to try it, as I have been obliged to give up growing cauliflower on account of the ravages of the worm. For years past, however, I have kept my currant and gooseberry bushes clear of the worm by liberally mulching the bushes with tobacco-stems as early in the spring as the ground will work, first spading in some compost, and, after levelling off, laying a thickness of about fifteen inches of the stems under each bush. This mulch is beneficial to the bushes, keeping the ground moist, while the potash contained in the stems serves as a fertilizer. My bushes make vigorous growth, bear well, and are under this treatment proof against the worms. I get any quantity of stems I want from a local tobacco factory without charge.

Yours truly,

H. PRIMROSE.

Pictou, Nova Scotia.

[NOTE.—We trust that our correspondent will give the result of his trial to the readers of the *Canadian Horticulturist*.]

SMALL FRUITS FOR FARMERS.

(For the Horticulturist.)

Why is it so few farmers grow small fruits enough for their own tables? It is not on account of the work required to grow them, because there is no crop grown on the farm that will give better returns for the amount of labor bestowed upon them. There are several reasons; perhaps the greatest is, they know so little about growing them, they think it requires a great amount of labor and skill, and, again, so many have bought a few plants and put them out in the garden, where all of the work has to be done by hand, hence requires so much time they do not get attended to. The time is not far distant when farmers will think as much of having their patch of strawberries and raspberries as they do of their potatoes and cabbage. Every farmer's lady knows how difficult it is to get up a nice meal early in the summer without having a patch of strawberries to run to. The plan that is most practicable for farmers, as a rule, is to plant out a few rows in the spring, on any soil that is good enough to grow potatoes. Clay loam is to be preferred, if not too heavy; if it has been plowed in the fall do not plough again in the spring, but cultivate well and plant early. It will take but a short time to set the plants, and they will not need any more work until after seeding is done.

For strawberries, plant in rows four feet apart and twelve to eighteen inches apart in the row. Cut off the first runners that make their appearance, also cut off all fruit stems. As soon as they send out three or four strong runners at once let them run, but keep working with your corn cultivator between the rows, narrowing the cultivator as the rows spread out until you get a row eighteen or twenty inches wide, letting the plants grow as thick together as they choose in the rows.

In the fall, as soon as the ground freezes, cover with straw, putting the most between the rows and just enough on the plants so you can see them through the straw. Leave it on until after the fruit comes off. The plan we have found to take the least work where land is plenty, is to plant out a few rows every spring and work as above. It does not take as much work to set out and take care of a new patch as it does to clean out the old one. You can leave the old patch to bear another season without any work, except cutting out the large weeds that grow up among them. You will get quite a crop of earlier fruit, but not so large as from the new plantation. By planting several sorts, such as Crescent Seedling for early, Wilson and Captain Jack for medium, and Sharpless and Kentucky for late, you can have them on the table every day from four to six weeks, and if you want to grow some of the finest and best flavored you ever saw, plant a few of Longfellow, Warren and Bright Ida.

Raspberries should also be planted so they can be worked with a horse and cultivator. Put in rows six feet apart and four feet apart in the row. When new growth is two to three feet high pinch back and let the side shoots get fifteen inches long pinch back again, then your bushes will grow strong and will not need staking. For the Cap varieties, cover the ground in the row, where you cannot cultivate (between the bushes) with coarse manure. It will keep the ground from drying out and largely increase the crop of fruit. The red varieties will grow too rank if manure is put around them until they have borne one or two crops of fruit. Let only four or five canes grow in a hill of the red sorts, hoeing off all suckers as soon as they make their appearance. If worked well until July, will not need any after that time, and

but few weeds or suckers will grow. The most popular Black Cap at the present time is the Gregg. It is very late. It, with some one of the early sorts, of which there are several now offered by responsible dealers, will give all that is desired in black varieties. Turner and Cuthbert are the two best red varieties yet fully tested and will give a succession of fruit from early to the very latest.

W. H. HILBORN.

Arkona, Jan. 22nd, 1883.

THE ENGLISH SPARROW.

I regret to see that at the meeting of the Ontario Fruit Growers' Association, Mr. W. E. Wellington's adverse resolution regarding the English Sparrow was passed.

Having had a very long acquaintance with the bird, and having observed it closely in England, as well as in other countries, my conclusion is most decidedly, completely in its favour; in fact, I do not know of any small bird equally useful as a destroyer of moths, butterflies and caterpillars. Times without number have I watched the sparrow in the early morning carefully searching crevices and chinks in buildings for moths; and numbers have I seen turned out of their hiding places and captured by the little bird. So fond of moths is the sparrow that I have even seen it abstract dry, dead ones in the winter time and eat them. Many and many a time have I seen the white cabbage butterfly (*Pieris rapae*) hotly chased for a hundred yards or more by the sparrow, which seldom failed in making a capture, although the zig-zag, unsteady flight of the insect frequently sorely puzzled the sparrow. I have, too, often seen the sparrows collecting caterpillars and flying off with them to their nests; and anyone who has closely studied the

habits of the sparrow in England, knows to what a great extent caterpillars form the food of the young. It should be borne in mind that the young of the Fringillidæ are not fed on hard seed, nor on fruit, but principally on insect food. It is principally as a destroyer of moths that I admire the sparrow. To some butterflies it is partial, but any moderately sized moth it will greedily seize; and a more clever searcher for moths in their day time places of concealment it would be difficult to imagine. On this account, if no other, the sparrow should be carefully protected. It is the very best friend the gardener and the fruit grower could have, but unfortunately in this country its habits seem to differ from those of the old country, for there it is freely distributed over every farm in the land, while here it will not leave the shelter of the towns and villages. My farm is only about a mile and a half from Milton, where there are a number of sparrows, but I have not seen a sparrow on my place yet.

The sparrow will take its small share of grain and fruit, but this is amply paid for by the insects destroyed by this most useful bird. I need not say more in favor of the sparrow than that I most surely know it, from my own careful observation, to be a great destroyer of injurious insects, and it would be indeed a pity and folly to exterminate it, now that it has been introduced to the country. I only wish it were generally spread as at home, and I am sure it is most welcome to the run of my farm and orchards. I don't think any reliable conclusion will be come to by the proposed committee on the little bird, and if they come to an opposite conclusion to the statements of the three leading British naturalists whom I shall now quote, I shall be sorry for the committee as well as the sparrow.

Yarrell, the author of the standard work on British Birds, says:—"Their young are fed for a time with soft fruits, young vegetables and insects, particularly caterpillars, and so great is the number of these that are consumed by the parent birds and their successive broods of young, that it is a question whether the benefit thus performed is not a fair equivalent for the grain and seeds required at other seasons of the year."

Macgillivray, author of an elaborate and critical History of British Birds, says:—"The seeds of various plants, such as the field mustard, *Sinapis arvensis*, the charlock, *Raphanus raphanistrum*, the chick weeds and mouse ears, *Stellaria* and *Cerastium*, as well as of the field and garden pea, *Pisum sativum*, are also gathered; and in summer it partly subsists on insects of various kinds, which also afford the chief nourishment of its young."

Dressor, the author of the recently published magnificent work on the Birds of Europe, says:—"In open places where there are a few trees in the towns, such as the gardens in the squares or in the parks, it is eminently useful in ridding the foliage of the insects which would otherwise destroy the leaves and tender shoots; and its utility in this respect has led to its being introduced into the United States, where in the main streets there are avenues of trees which, previous to the introduction of the present species, were rendered bare and leafless by the ravages of caterpillars. During the breeding season insects, whenever they are to be had, form the staple food of both old and young birds. Mr. Snell says that it is very fond of the seeds of *Polygonum aviculare*; and it may occasionally be seen to catch the common white butterflies (*Papilio brassicae et rapae*) on the wing, though not so frequently as one could wish. It destroys, however,

myriads of the small smooth caterpillars and larvæ which feed on the buds of the trees, and is one of the best guardians of the orchard. It is true that it also takes toll of the fruit, but one can well spare a little when one reflects how much the crop of fruit is dependent on its active labors in destroying these noxious insects."

The authors referred to speak of the sparrow being a consumer of the seeds of weeds; this is the case with almost all the Fringillidæ, and I have observed the snow bunting (*Plectrophanes nivalis*), and the mealy redpole (*Linota linaria*), on many occasions very busy with the seeds of different weeds which got the better of us in this land of weed luxuriance, as it is also the land of caterpillars and vigorous insect growth. We want not only abundance of *Passer domesticus*, the common sparrow, but of as many similarly disposed birds as we can get, for the little birds of the country don't make any headway against the insect pests. During last summer the trees in my "bush," and in all other "bushes" that I saw, swarmed so with caterpillars that walking in them was most unpleasant, we got so covered with caterpillars.

Pray let everyone advocate the careful preservation of so useful a bird. Better let the sparrow have a little of fruit and everything else, than let the insect pests have nearly all, or all, as the case may be. I did not secure a single one of my cabbages this year owing to the ravages of the caterpillar of the white butterfly. I did my best, trying to catch the insects with the butterfly net, but they stole a march upon me and the caterpillars were abundant. Did not I wish for a flock of the English, or any sparrow that would do the work.

All the small birds and thrushes (*Turdus migratorius*, the "Robin" in-

cluded), are most useful in regard to insects and their larvæ, and we can well afford the very little fruit some of them take. At least three pairs of "Robins" bred near my house, and I hardly missed the cherries taken; but the Red-headed Woodpeckers (*Melanerpes erythrocephalus*), did take a considerable number of cherries, and when cherries were over they scooped out many an apple, especially colverts.

A selection of our useful insect destroying birds, such as common and tree sparrows (*Passer montanus*) Chaffinch (*Fringilla cœlebs*), Brown Linnet (*Linota cannabina*), and the Buntings, *Emberiza citrinella*, *E. miliaria*, *E. schenicius*, *E. cirrus* and *E. hortulana*, would be of great service to the country. Apart from their useful work, the songs of some would render the country doubly delightful. The Skylark (*Alda arvensis*), ought also to be introduced as a great devourer of field insects; and would not its song be an acquisition to Canada. I believe one or two attempts were made to introduce the skylark in the States; but English birds, instead of Norwegian or Swedish, were tried. In the north of Europe the skylark is migratory, so is the song thrush (*Turdus musicus*). North European examples would have gone south on the approach of severe weather, but English larks would not know what to do, and I am afraid they all perished in the States with cold.

Of the European insectivorous birds, the true Silviadæ, we have not any in Canada. They would be very difficult to import, but the Finches, Thrushes and Larks might be naturalized in Canada. This is the work that ought to be done, instead of exterminating the poor useful sparrow.

I remain, yours faithfully,

W. E. BROOKS.

Milton, 1st Feb., 1883.

DO BEES INJURE GRAPES?

TO THE EDITOR OF THE CANADIAN HORTICULTURIST.

SIR,—A letter in last issue of the *Horticulturist*, from the pen of D. V. Beacock, reminds one that this vexed question is not yet settled to the satisfaction of everybody. The testimony of the Hon. J. C. Rykert and Mr. Taylor has been given against the bees; whilst the testimony of many others, both here and elsewhere, has been adduced as evidence of their guilt. At a meeting of the Canadian Horticultural Society, recently held at Owen Sound, this question was brought up and discussed. The poor bee, having no friends in court, was found guilty, and convicted of the crime charged against it. Absence from home on that occasion prevented my being present and testifying in behalf of the innocent insect.

That bees work upon *injured* grapes there can be no question. That they work upon injured apples, rotten pears, bruised peaches, and damaged plums, is equally true; but my own observation satisfies me that they never puncture or in any way injure a perfectly sound grape, or any other sound fruit. I have grown grapes and kept bees for some years. I have closely watched the operations of my bees upon my own grapes. I have repeatedly tempted them to commit the depredations charged against them by hanging bunches of sound grapes upon and in close proximity to their hives, and I have never yet known them to attack or injure a perfect berry. I have afterwards gone round and bruised some of the grapes by pressing them between my fingers, and immediately those bruised grapes would be covered by bees, utilizing what would otherwise be lost; but the unbruised grapes were invariably left untouched and uninjured.

I have frequently extracted honey in my glass grapery when the fruit was

ripe, and although the building would be swarming with bees, and the berries that had burst (as they frequently do) would be emptied of their juices, I have not seen a sound grape punctured or otherwise injured by them. With outdoor grapes my experience has been the same. I have had as good an opportunity of judging on this question as most men, and my testimony is that bees never injure perfect fruit of any kind.

R. MCKNIGHT,

President Ontario Beekeepers' Association.

Owen Sound, Jan. 19, 1883.

REPORT ON FRUITS.

The apple crop in this part of the country has been the poorest I have seen for some time; the show of blossom was as fine as I ever saw. We had cold, bad weather at the time, which I think injured the blossom. The Snow Apple, Early Joe, Harvest and Norton's Melon set an abundant crop, but the fruit was so spotted and knotty that it was of little worth. Baldwin, Red Astrachan, King of Tompkins, Maiden's Blush, R. I. Greening, Canada Reinett and Ribstone Pippin had a light crop of good fair apples. Alexander, Duchess of Oldenburg, English, Roxbury, A. G. Russet, Hubbardston's Nonsuch, Hawthornden, N. Spy and Dutch Mignonne were heavily laden with fruit, some of them as fine as I ever saw. The Fall Pippin, Esopus Spitzenburgh, Gravenstein, Hawley and Indiana Rose Ripe failed badly. Some did not set any fruit. The Dutch Mignonne apple was the heaviest loaded and finest, in size and appearance, they have ever been since bearing. I find ready sale for them on the Brantford market at \$1.40 per bushel. They do not appear to be much known. I have not seen any at the market or shows besides my own. They are not on any fruit catalogue that I have. A. J.

Downing speaks highly of it in his *Fruits and Fruit Trees of America*.

The Burnet grape has done well with me. It fruited the first time the past season. The Senasqua grape failed to grow. The Moore's early grape vine, sent last spring, has lived and made fair growth.

I remain yours truly,

JAMES COWHERD,

Newport P. O., Ont.

PEARS CRACKING AND SPOTTING.

TO THE EDITOR OF THE CANADIAN HORTICULTURIST:

Will you, or some of your readers, tell me through your magazine what the cause is of my pears cracking and blotting? The kind most affected is the Flemish Beauty. I almost lost my whole crop last year. They seemed to be all right until they were about two-thirds grown, and then they were first taken with black blotches—just as though they had been splattered over with black ink. This caused the skin of the young fruit to harden, and shortly after the fruit started to crack open. In a great many cases the cracks ran horizontally and reached nearly around the fruit, and in very bad cases it nearly penetrated into the core, and in other cases the cracking will run in all directions without any limit or rule—only to destroy the entire fruit. This trouble made its first appearance two years ago, but it was not fatal until last year. I have some trees highly cultivated with top-dressings of wood-ashes—a clean surface—no other crop grown amongst these trees. I also have trees growing in sod without any cultivation, and their fate is exactly the same as before stated. All my early pears up to the Bartletts have not shown any signs of the aforesaid disease. My soil has a clay bottom, with a black, rich mould on top, with a good descent in the direction of a running stream of water. I have well on to a hundred

pear trees, and about one-third of them are now coming into bearing, but diseases are, it seems, following up as fast as the trees are growing. Please, sir, if there is any cure, will you let me know through the *Canadian Horticulturist*, and oblige your constant reader?

D. B. H.

January 19, 1883.

FRUIT IN CLINTON, ETC.

TO THE EDITOR OF THE CANADIAN HORTICULTURIST.

I think that the readers of the *Horticulturist* should return you thanks for its excellent appearance, and for the valuable reading it contained during the past year. I think it a shame that every fruit-grower cannot be induced to take it. As an old member and residing in a cold part of Ontario, the difficulties of fruit-growing the past year have been many. I think that it was the spring frost that killed the plum and peach crop and lessened the grape crop. I trimmed the grape in the fall, laid them down and covered them with leaves and boards. I had a medium crop. The Clinton and other thin-leaf varieties were eaten bare, so that the fruit did not ripen; the spring was late and the frost came on early in the fall, so that the late grapes were destroyed. My Burnet grape has fruited three years. I have had to root it up as I cannot prevent it from mildewing; also the Salem. I potted strawberry plants, and they bore a good crop the first year. There was an insect that eat the leaves in small holes. If I found a plant dying, on digging up the root there was the larva of the June beetle, good to feed chickens. The gooseberry and currents were badly affected with worms on the leaves all the season till the fruit was ripe; the rain washed the hebleore off. To avoid the loss of my bushes by the pith worm, I think the bush form is the best, as you can cut out the affected stems and renew with

new wood; not so with the single stem or tree form, as it will destroy it. I tie them together in the fall, so as to prevent the snow from breaking them down. I have a number of unfruited English gooseberries; most of them are affected with the mildew. The Downings and Houghton Seedlings are the best for a sure crop here. The Grimes golden pipin apple has fruited some years. I picked three bushels last fall badly affected with the worm; the fruit is good quality for eating, cooking or keeping. I have them on hand now. The crop of apples was not good in this country last fall—worm-eaten, spotted and disfigured—yet thousands of barrels were shipped; but the greatest difficulty is to get fruit-growers to be honest and pick and pack them right for the English market. My Grimes golden pipin tree is badly affected with the bark coming off in scales, leaving a hole open into the wood underneath; it is full of insects, and I call them the woolley aphids. They are red and look like a mildew on them; they came with the tree. What is your remedy to kill them? I was going to wash the tree with soft-soap water in the spring. [Yes, that is right.—Ed.] What is the cause of the strawberry flower going into a black, hard substance instead of to fruit? [Probably late frost.—Ed.] The plum trees are all getting badly affected with rot and black knot. We ought to get a law passed, making a fruit-grower a constable, to protect him from boys stealing his fruit. I have tried different ways to keep grapes. The only way I have succeeded in is putting them down in sawdust. I found hemlock best, dried in the oven. We put down some Clinton, Isabella, Salem and a few of Rogers in cork sawdust that I procured at the fruit stores, that the Spanish grapes are packed in. My grapes are opening out as fresh as when they came off the vine; some of the stems

are quite green. I sent to St. Catharines' cork-factory for a barrel of dust, but they sent cork-shavings. If they would grind it up to dust, it would pay grape-growers to buy it, as tough-skin grapes will keep till after this, and our best grapes are better quality than the tough white Spanish grape. We brush the bunches with a downy feather, and it takes the dust off the grapes. I syringe soap-water over my vines to protect the leaves from the insects. I think it stops them some. Do you know any remedy? I consider the Champion grape not much account here, only being early. The Council give me power to get all the shade trees on the street that are dead or objectionable. I have been going for Lombardy poplar, abele, willow and the locust. The last is like a honeycomb, eat out with borers. We have had a planting-day in the spring. We have set out over a thousand maples a season. I have cut down poplars eighteen inches through, making several cords of wood, since I first saw them planted. It is not every town that heats its town hall with trees planted by its citizens.

W. C. SEARLE.

EARLY RIPENING GRAPES.

I would like to see the names of about twelve of the best early grape vines in the *Canadian Horticulturist*. My Concord grapes did not ripen last year. I think that if they would ripen before the Concord they would answer here. I had ripe grapes on one vine, and fruit on three that did not get ripe.

H. P.

Moore's Early, Early Victor, Jessica, Herbert, Lady, Massasoit, Worden, Delaware, Champion (but of poor quality), Janesville (also poor quality), Early Dawn (very subject to mildew), Halford Prolific.—Ed. *Can. Hort.*

PROPAGATION OF THE WEIGELA.

TO THE EDITOR, OF THE CANADIAN HORTICULTURIST.

Would you kindly give in the next issue the plan pursued in propagating the Weigela Rosea, and oblige,

Yours truly, R. M.

You will probably succeed best by enlarging the young shoots of last season's growth. Peg them down in the spring, burying the bent portion deep enough in the soil to keep it moist, and remove from the parent plant in the fall or spring following. It can be propagated from cuttings of the young wood under a hand-glass, or better from cuttings of the half ripened wood taken off in summer and rooted in a frame.

PACKING CELERY.

Can the Editor, or any reader of the *Horticulturist*, give a recipe for packing celery for winter use? I had about sixty heads taken up and buried in sand, in the cellar, to about the same depth as they stood in the ground. They took root and did finely for about two months; then they wilted at the top and began to decay. The decay ran all the way to the root, following the two centre leaves. This was my first experience, and not very successful at that.

G. H. F.

ENGLISH SPARROWS.—At the Michigan horticultural meeting several fruit growers told us that the English sparrows were rapidly bringing grief to the farmers and fruit growers. It was the old story of destructiveness and fighting propensities. And now we notice in an exchange that at Mt. Vernon, Ill., a gentleman had twenty acres in wheat, from which he expected a fourth of a crop, the heads having every appearance of promising such a yield. He resolved to cut it for seed, and sent some persons to gather it. They returned soon after and reported that there was not a grain of wheat in the field, the sparrows having eaten the entire crop.—*Prairie Farmer*.

THE CHERRY SLUG.

(Selandria cerast.)

This troublesome enemy, which attacks alike the cherry, pear and quince, has now nearly completed his operations for the present season. The foliage of the cherry is apparently his special favorite; although judging from results where he is allowed to operate unchecked, there would seem to be but slight difference.



FIG. 1.

We can but feel a degree of surprise that where a few moments of time and the scattering of a few handfuls of lime, ashes, or even dust, occasionally repeated, would suffice to exterminate them, they should so generally be permitted to run their race, year after year, often even to the utter ruin of the trees.



FIG. 2.

We detected them this season upon our quinces, which, in passing, we frequently examined, and by the use of an occasional handful of dry earth scattered over them, saved the foliage.

In doing the same with perhaps one hundred young pear trees, embracing perhaps forty distinct varieties, standing together in nursery rows, we discovered that the insect manifested a very decided preference for certain varieties, since those with smooth, glossy foliage were persistently avoided; while others, with different foliage, were as constantly attacked; the difference being equally manifested, even when the branches of the two interlocked. On several varieties, with very firm, glossy leaves, not a slug was discovered during the entire season; while with others ad-

jacent constant watchfulness was required to keep them in subjection.—T. T. LYON, in *Michigan Farmer*.

[NOTE BY THE EDITOR.—The insect above alluded to by Mr. Lyon is shown in the accompanying cut. Fig. 1 represents a leaf upon which may be seen a couple of these slugs feeding upon the upper surface. The slug shown in Fig. 1 and marked *a* is of full size. Fig. 2 represents the fly which laid the eggs, from which these slugs are hatched. They lay their eggs usually early in June, which hatch in about a fortnight. The slugs attain their full growth in twenty-six days, and in this time they moult or cast their skins five times. After the last moult they are no longer of their usual olive green color, nor are they shiny, but are smooth and of a yellow color. They now pass to the ground, burrow in it to the depth of two or three inches, form each a little cell, and in this cell change to the chrysalis, and in sixteen days the fly hatches out and lays her eggs for a second brood of slugs. This usually occurs about the first of August. This second brood attain their full growth about the end of September, go into the ground and remain there until spring. Hellebore mixed with water and sprinkled upon the slugs is sure death to them. Sometimes dry soil and even ashes fail to kill them; they crawl out of their sanded skins and go on as if nothing had happened.]

SHAFFER'S COLOSSAL RASPBERRY.

Last spring I planted tips of the new Raspberry, Shaffer's Colossal. To my surprise, there soon appeared shoots that set blossoms, and which were followed by the largest raspberries I ever saw. It was not an isolated case, but at least 10 per cent of the plants were bearing. They came in when other Raspberries were gone, and are in full blast



SHAFFER'S COLOSSAL RASPBERRY.

now, (July 29th), with a prospect of berries for a month to come. Not a few scattered berries, but trusses

with fifty berries on one shoot, and such berries—an inch in diameter. The fruit is the color of the old purple cane that

I used to gather in my mother's garden more than fifty years ago. It has the flavor of the Catawissa and about the same texture. Not firm enough for very distant carriage, but it will be a splendid one for home use and a near market. It is not sweet like the Turner, but has a pleasant acid mingled with it, which makes it superior for pies, tarts and preserving, and with cream and sugar, I can endorse it fully from experience.—SAMUEL MILLER, *in Fruit Grower*.

THE HIGHLAND GRAPE.

I am not sure but we should review, and perhaps modify our opinions about the Highland Grape, as, when quite ripe, it loses its objectionable acidity, and as it has no foxiness, it may be, for southern regions and wherever the Catawba will ripen, a desirable grape. It is unfortunate that its period of ripening has been so misrepresented, for many have doubtless planted it in northern localities, where it will never ripen. This has been an unusual season, and many grapes have been a full month later in ripening than in other more favorable seasons; but I cannot believe the Highland should be classed as an early ripening grape under any circumstances. It is healthy and vigorous in growth, and the clusters are unusually large and handsome, and I think, from my experience with it this year, it will be found at least "good" in quality for southern planters, and for all places where it will ripen perfectly. G. W. CAMPBELL.

Delaware, Ohio.

REMARKS.—With the above Mr. Campbell sends us a bunch each of Highland, Lady Washington, and Naomi, the first two of which ripened with us perfectly this season, as until Nov. 3rd we had no frost. The berries of the Highland bunch were large and showy, but sour. As to the Lady Washington, there is nothing remarkable about it as to quality. The Naomi is a green grape, without bloom or color. Its flavor is peculiar, but not agreeable.—*Rural New Yorker*.

FLAT CULTURE FOR POTATOES.

EDS. COUNTRY GENTLEMAN—Several years ago I became a convert to flat culture for potatoes, and every season convinces me that this mode is preferable to the forming of hills around the plants. This season being a very moist one in this section, fully demonstrated with me that in moist as well as dry seasons flat culture is the better of the two. Just across the fence from my potato patch was a field of my neighbor's, of about four acres, planted about ten days before mine. The ground is alike on both patches—clayey loam. My neighbor manured more liberally than I did. He adopted the hilling method of culture, and I the flat method. In the early part of the season his made a much more vigorous growth than mine; in fact the foliage in his field covered the ground before mine had apparently well begun to grow. As the season advanced mine gained in growth upon his, and maintained greener foliage longer. His ripened about a week ahead of mine, but while his crop averaged 180 bushels to the acre, mine averaged 250 bushels to the acre. There was seventy bushels difference, upon soil similar, his having the advantage of more manure than mine. I consider that flat culture requires less labor than hilling, produces heavier crops, and the quality is just as good, with all other conditions the same. M. MILTON.

Mahoning County, O.

STRAWBERRIES AT ROCHESTER.—T. T. Southwick writes to the Gardener's Monthly that the fruit dealers in Rochester have paid out for strawberries this year \$84,000. One canning establishment absorbed 10,000 quarts a day, which at only five cents a quart would be \$500 daily, or \$1,000 at ten cents. The same house is said to have canned ten tons a day of cherries, or 200 tons in all.

HOW TO GROW EARLY CABBAGE.

I sow the seed of the kinds I wish to grow in February or first of March, in small shallow boxes in forcing pit, hot-bed, or if these are not to be had, a sunny window of the house will do. The boxes I use are eighteen by twenty-four inches, three inches deep; made of one-half inch boards. The kinds of early cabbage I generally raise are Early



EARLY JERSEY WAKEFIELD.

Jersey Wakefield (best if pure), Early Winningstadt, Early Summer and Fotler's Early Drumhead. The first two for early; the others for second early. I only treated the first two as above stated; the second early I sow in common hot-beds 1st to the 15th of March. After the seeds sown in boxes (say 15th of February) are up and about three inches high, it is necessary to transplant them in other boxes, like those they were sown in, about one and a half to two inches apart every way; or if any wish to have them in small pots (two and a half inch) put one plant in each pot, and pots close together in boxes, treating the same as if planted in boxes. Pots are better than boxes and I use them largely. About one week or ten days before planting in garden, they must be hardened off by exposing gradually, night and day, in open air. I set out my plants from 15th of April to 1st of May. The plants which are in boxes are taken in the boxes to the part

of the garden where the ground is ready to plant. Take a garden reel, stretch out straight, take plants out of boxes with care so that the soil will stay on the roots. Plant Wakefield twenty inches in rows and Early Summer the same; the other kinds twenty-four inches. The rows should be thirty inches apart, so that a cultivator can be used. Early radish, lettuce, spinach, etc., can be sown between the cabbage rows and be out before the cabbage needs all the room. After cabbage, celery can be grown on the same ground. In this way other vegetable plants can be raised to advantage. In fact, I have raised all the following with success: early cauliflower, early lettuce, early kohlrabi, early Savoy, early celery, early beets, early tomatoes, early cucumbers and early squashes.—AUGUST D. MYLIUS, in "*Gardeners' Monthly*."

THE VIRGINIA FRINGE TREE.

(*Chionanthus Virginica*.)

To any one in search of a beautiful and not commonly seen shrub, or small tree, for the lawn, we earnestly commend the Fringe Tree, or White Fringe, under which name it is also known. It grows wild in Virginia and southward, and succeeds well in cultivation throughout the Northern States and Canada. Yet although it requires not more care than other lawn shrubs, and is much prettier than many whose place it might occupy, it is but seldom seen in northern gardens.

It grows from a bushy shrub to a small tree of twenty or more feet in height; its leaves are large, oval oblong, dark green, somewhat downy, resembling Magnolia-leaves; its delicate, snowy-white flowers hang in loose and gracefully drooping panicles. A Fringe Tree in spring, when in full bloom, covered with a profuse mass of long

graceful fringes of pure white flowers swaying in the breeze, partly hidden by the large, deep green, glossy foliage, is a beautiful sight indeed.

The shrub is of rather slow growth at first, but in a rich, loamy, rather moist soil, it thrives pretty well, especially when sheltered from the bleak west and north-west winds by a group of Evergreens. It may be propagated from cuttings, but it becomes hardier and more vigorous when grafted on the common Ash.—*American Garden.*

A NEW SWEET CORN—NE PLUS ULTRA.

One ear of this was sent to us and the kernels were planted May 16, in garden soil. The request came with the corn from W. Atlee Burpee & Co., seedsmen of Philadelphia, Pa., that we would test it and report "*just what you think of it.*" The ear sent was $5\frac{1}{2}$ inches long—12 irregular rows, kernels much shrunken, small, peg-shaped and half-transparent. Our first "mess" for the table was cut August 8—34 days from planting. The stalks were slender and grew from six to eight feet high, bearing the ears generally low. The silk is always purple, the husks sometimes bronzed, the kernels deep, the cob very thin and reddish in the middle. Some stalks sucker moderately; others not at all. It is a very prolific variety, the main stalks bearing from two to five perfect ears. The size of the ear, while it may not be large enough to suit the prevailing market demand, is just that which enables one to hold it easily in the fingers and to eat the kernels from the cob without stretching the mouth open inconveniently wide. The quality is sweet, tender, delicious. We would suggest to those who try this corn that ears should be selected from the stalks which bear the most ears and which do not sucker. In this way this distinct

and very desirable sweet corn might still be greatly improved.—*Rural New Yorker.*

SMALL TREES.

"The average American is in a great hurry to realize on his investments. If he orders a few garden seeds in January he is anxious to have them sent immediately; and if he forwards six cents for a copy of some paper which contains a story which he has read or heard, he does not forget to request the publisher to send it "by return mail." Patience which takes the form of quiet waiting is a virtue of which he seems to be wholly ignorant. He cannot wait the progress of events, but must constantly hurry and fret in order to make nature move a little faster than her usual pace.

"This tendency crops out very plainly when he purchases trees. He finds them described in the catalogue as "second-class, medium, first class, extra." The difference in these classes is principally, if not wholly, in the size and height of the trees. The larger the tree, the higher the price—but the farmer "don't care anything about that." He wants "good trees or none," and gives his orders for those of extra size, and which are four or five years old. In doing this he thinks he is acting wisely, but the nurseryman knows better, and the farmer will find before long, that with equal care the small trees will grow faster, and, if a fruit tree, will come into bearing condition sooner than the large ones.

"In a half dozen years the tree that was small when planted will be larger and finer than the other. The reason for this is obvious. The larger the tree the larger the roots which it has, and the larger the roots the less fibers there will be upon them. A tree that has plenty of fibrous roots will grow readily, if proper care is used in the transplanting; but no amount of skill can coax a tree

to live and flourish which is destitute of these little fibres. The roots of large trees are mutilated in the process of taking up, while the small trees sustain little injury from this source. Dealers in trees assert that experienced men buy small, thrifty trees, while those who are just starting, are anxious for the largest to be had. Those who are to set trees the coming season will do well to learn

from the experience of those who, at considerable loss to themselves, have demonstrated that small trees are the ones to buy. The testimony of the foremost orchardists goes to show that one year old fruit trees will be larger and more thrifty, as a rule, and come into bearing as soon as those of two, three or four years old at planting from the nursery."—*Journal of Agriculture.*



OLD IRON-CLAD STRAWBERRY.

The plants are *very* vigorous—more so than the Sharpless. The fruit resembles the Sharpless greatly in size and shape. It is light scarlet—not as dark or deep as the Wilson. It is five days earlier than the Wilson. Blossoms perfect or Hermaphrodite. Berries carry well, having shipped it 300 miles in perfect condition, and selling much better than the Wilson. It stands the drouth perfectly, and is very healthy.

It is the rankest, healthiest growing plant on our place—even surpassing such sorts as the Bidwell, Sharpless, Green Prolific and Windsor Chief in this respect. It forms the largest stools or crowns, and makes the most fruit germs in the fall of *any* sort we ever

saw. We have grown and fruited it the past season, and in our *thirty-five years experience* in growing strawberries we have not seen its equal for growth and large sized plants, and in this respect it differs and is more distinct from other sorts than any known strawberry.

A prominent horticulturist of Missouri says of it: "This strawberry is a remarkable production. Last year scarcely a plant succumbed to the drouth in beds side by side with the Wilson, where not a plant of the latter survived, as can be attested by numerous growers here. All that is claimed for it is true. The only objection, if it is an objection, is that the berry is *too* large and in many cases not as handsome as some berries, as it has the appearance of three or four berries together to form a mammoth in size."—*Fruit Recorder.*

BLACK WALNUT TIMBER PLANTATIONS.

The planting of Black Walnut for timber will, if judiciously done, be a valuable investment. But it is desirable that it be done with reasonable expectations. The following letter, which we clip from the *Country Gentleman* gives the opinion of a writer who thinks that some are counting the profits too fast. He says:

In your issue of the 21st September, (see page 17 of this volume) I notice a note on black walnut, which I think contains some errors calculated to deceive those who are planting forests. The plan of planting and cultivating them is good, but the result cannot reach that profit that Mr. Ragan's figures denote. He says that in twenty-five years they will bring \$1,000 per acre. That would be producing \$40 per acre every year from the time of planting for twenty-five years, which is double as much as the ground would produce in any other crop for that length of time. Mr. Ragan says that walnut lumber brings \$100 per 1,000 feet in the cities. Some choice specimens bring that price, but there is more lumber sold for \$50 per 1,000 than there is for \$100. I have been handling walnut lumber, and it has always been high class lumber, and \$60 per 1,000 has been the highest price that I have received in Cincinnati, O.

I also think that there is a mistake about the growth of the trees. In twenty-five years he says the trees will be worth \$5 each (for lumber I suppose). At that age they will not be fit for lumber at all, much less grade as \$100 lumber, which must be 14 feet long and 20 inches wide (or thereabouts), and free from blemish of any kind. Again, he says: "At 14 feet apart there will be over 200 trees to the acre, and these should sell for \$5 each." Now, trees (or rather sapling) may grow at that distance, but they would never get large enough to make saw logs worth \$5 to the tree, or even logs that would be merchantable at any price. There is a tree on this farm that I know to be something over twenty years old, and it is standing in a very rich black walnut soil near a branch. It has always had a very strong and

vigorous growth, and it is now about one foot in diameter at the ground, and about 60 feet to the very top twig. If cut down it would look more like a skid to load logs with, than the log to be loaded. The black locust is much more profitable than the walnut. They will grow much closer together, and will grow at least twice as fast. They are also merchantable at 6 inches in diameter, making good posts at that size, whereas the walnut at that size is hardly fit for anything. At twenty-five years of age the locust trees may stand 14 feet apart, and might be worth \$2.50 each, or \$500 per acre, but I have some doubt about their reaching those figures. At any rate black walnut never can.—T. W. C.

Clay Village, Ky.

FRUIT EVAPORATORS.

The fruits cured by this process, for all cooking purposes, are the same as fresh or undried fruit; no one can tell the difference. The process of evaporating the water from the fruit being so rapid that fermentation is impossible, and with proper care in packing and storing, the fruit may be kept in perfect condition for years, thus enabling the excessive product of one season to be carried to the next, which usually alternates with a light crop. Every farmer having a good orchard should have an Evaporator; with it he can always make his apple crop yield him at least 50 cents per bushel, excluding labor and other costs. This in years of plenty would be of great value, as usually most of such crops are lost: there need be no fear of over-producing, any amount can be sold in Great Britain; parts of our Dominion will never produce fruit enough for their own use. This process will eventually drive out of use the abominable dried apples. The market price for the evaporated apples has been thus far in our Province from eight to thirteen cents per pound. The product from one bushel (apples) is from five-and-a-half to seven pounds per bushel.

All kinds of fruit, berries and vegetables can be dried, retaining their na-

tural flavor much better than by any canning process.—JOHN. H. PORTER.



THE SUPERB.

NEW SEEDLING RASPBERRY.

THE SUPERB.

Mr. J. Churchman, who introduced this raspberry to the public, thus speaks of it :—

It has now passed through its eighth winter and fully confirmed its previously well established reputation for *hardiness*, and borne an unprecedented crop of fruit during the past summer, notwithstanding unfavorable weather at the time of formation of the berries, and notwithstanding an unrestricted growth of young canes, which prevents the usual and proper tillage. The points of merit claimed for the *Superb*, as established by an experience of eight years, are:—

1. *Vigor of growth and hardiness of canes.*

2. *Earliness and length of bearing season*, beginning to ripen in ordinary seasons, about the middle of June, and continuing about four to five weeks on old wood—young canes bearing sometimes until October.

3. *Productiveness*; the show of fruit the season just passed, having excited the admiration of all visitors to my ground.

4. *Size, color and flavor of fruit*; size shown in accompanying cut; color, rich dark scarlet; and flavor remarkably spicy and tart; unlike any other raspberry.

5. *Power of resisting injury from drought.* During the whole month of July we had no rain at all of any value; and yet, while my bushes were almost

daily picked, producing through all that time, fine, large berries, and although during the last two weeks of the time, no moisture could be found in the ground at a spade's depth, yet the young canes have continued to show their peculiar, lively, green color, and none but the old bearing canes, nearing their natural death, having shown signs of suffering.

No claim is made to *extraordinary carrying qualities* for this berry, this would be in direct contradiction to its well established reputation for peculiar high flavor and richness, which its large lobes and very few seeds give it.

We give also the remarks of others for the benefit of our readers.

A. M. Parry says of it, with us the *Superb* is perfectly splendid, largest size, bright color, wonderfully productive.

S. C. De Cott says it is a strong, healthy grower, prolific bearer, good quality, large, handsome and early.

E. Wolleb writes that his plants had a few berries, which in size and color were good, flavor good, rather too acid for my taste; must be excellent for jams.

E. Williams writes about it to the *American Garden* as follows—

This new candidate for public favor originated some eight or nine years ago on the grounds of Mr. J. Churchman, of Burlington, N. J. On fruiting it he was so well pleased with its appearance that he decided to retain the variety and extend its cultivation, which he has continued to do up to the present time.

He now has a patch of about an acre and a quarter, which, by invitation of that gentleman, I visited on the 4th of July last. Picking had already commenced in a small way some days previous, but I found the canes still

well loaded with a large crop of good sized berries in the various stages of development.

The plants, in foliage, fruit and other respects, strongly resemble the *Montclair*, though it suckers much more profusely, and appearances seem to indicate its Philadelphia parentage, as supposed. The berries were large, the best measuring three-quarters of an inch in diameter; color rather dark, flesh firm, with a rich sub acid flavor; quality among the best.

Mr. Churchman assured me that the size was much below the usual standard, owing to the want of moisture, the ground then being very dry and hard. This was undoubtedly the case; but this fact, in connection with the cool weather that had prevailed, furnished the best possible conditions for, producing a rich, solid fruit, of good keeping qualities.

It was these conditions that enabled me to keep specimens, brought away in good condition, for three days.

Had the weather then been as moist and hot as it was during the latter part of September, I could not have done this—the berries would have melted down in half the time.

It is this condition of weather and growth, previous to and during the season of ripening, that decides the ability of this fruit to stand shipment to distant markets.

A berry may exhibit one season admirable carrying qualities, and another prove a decided failure, solely from these climatic differences. This fact alone shows the importance of not being too hasty in jumping at conclusions from a single season's trial.

The only absolute merit the *Superb* or any other raspberry could possess, in the minds of some, would be its ability to stand shipment to market.

This, with earliness and productiveness would make it the best in existence, as it opens the door to the alluring picture of *profit* so deftly held out to view. I think the *Superb* has other merits quite as valuable. We want fruit to *eat* as well as to *sell*, and should the *Superb* do as well away from home, with other's care, and remain healthy, I think it will prove a valuable acquisition to our list of good and really hardy red raspberries.

But the editor asks, "If it is so near like the Montclair, what is the need of it?" I reply, it is a more acid berry than the Montclair, and some people prefer the pleasant acidity of the one to the rich sweetness of the other. Tastes will differ as we all know, and they must be gratified.

BEST TREES FOR TRANSPLANTING.

D. S. Curtis in the *National Farmer* says:

"Neither with the shade trees or orchard trees is it best to select the thriftiest or largest trees of the given age, when taking them from the nursery, except it be a few when the very best care and skill is used in transplanting them, for the rank, thrifty trees in the nursery are apt to get a worse set-back and hindrance in their growth, and are even more liable to die from transplanting than those of the same age which are smaller, with more appearance of being stunted.

"MULCHING.

"There is one thing should be particularly observed in all transplanting of trees, whether for ornamental purposes or for the orchard, and which is too generally neglected, if not even too little known; that is, *mulching*—covering the ground for several feet around the stalk or body of the tree with straw, leaves, or other old litter which may be at hand. The lack of this simple operation is the cause of much loss in young trees. This mulching is necessary both to preserve the moisture below, and to prevent the soil becoming too heated by the sun around the roots of the young trees."

ABUTILONS.

These plants must be well known by the majority of our readers who are fond of flowers, and although they have been appreciated by them, they would be still more so if some of the newer sorts lately introduced had been tried. Some of the older ones make, no doubt, very fine plants, and are rapid growers, but then this is all at the expence of the number of flowers. We have had the pleasure of seeing some of the dwarf growing kinds lately, and I do not hesitate to say that any one will be pleased with them. Their peculiarity consists in branching out close to the base, in blooming when only a few inches high, and in giving two flowers from the axis of each leaf. The following are splendid varieties:

Mary Milliar—Fine bold flower, very large; a decidedly rosy pink color, dwarf grower, and very free bloomer, much more so than "*Rosaflorm*."

Phillipine Welter—A German seedling, not quite as dwarf as the above, but a very good plant; flowers, parasol shape; color, salmon buff.

Purpureum—The freest bloomer we think; color, purplish crimson, changing to lighter purple as the flower fades. A very good plant.

Pauline Braun—A fine, bold, well-shaped flower, of a deep orange color, with a brilliant tint.

Golden Gem—Flowers small but of a very pretty lemon yellow color veined rose.

Abutilan Fraseri—Color, rich orange scarlet, shaded with crimson; a very fine plant, raised in Baltimore.

There are several more new varieties imported from England of undoubted merit, but any one will see from the above list what a splendid variety can be had these.

We must, however not forget the now old "*Boule de Neige*," which, as its name

implies, is a perfect "snowball." No collection should be without it, or "Darwini," which is also a free bloomer.

These plants are very easily cultivated, and increase readily from slips of half-ripened wood, or from seed. They flower best when pot bound, when they should be well watered with liquid manure.

Plants will bloom winter and summer. If you want a large specimen for winter blooming, plant it in the open ground, and lift it carefully in the fall, potting in good rich soil. They require plenty of water, and will thrive in any situation, *in farm and garden*.

BOOK NOTICES.

THE MASSACHUSETTS HORTICULTURAL SOCIETY has issued its schedule of prizes for 1883. We notice that it offers prizes to the originators of new fruits, flowers and vegetables, originated since 1875, and which after satisfactory trial shall be deemed superior in quality, or some other characteristic, to any now extant, and worthy of general cultivation. Prizes of \$25 each are offered for the best essay upon:— 1st. The merits of hardy shrubs and perennial plants as compared with bedding-plants in the embellishment of small places, and the conditions most favorable to the use of either class. 2nd. The best method of constructing and heating a green house for amateur use, taking economy and efficiency into account. 3rd. Are live hedges to be recommended, either for utility or ornament, and, if they are, what plants are most suitable? In offering these prizes the Society desires to elicit new facts, and preference will be given to an essay which adds to our knowledge over a compendium of what is already known. Essays to be sent to Mr. Robert Manning, Secretary, Horticultural Hall, Boston, Mass., so as to be received by the 1st of November next. Competition open to all.

W. E. BOWDITCH'S CATALOGUE, illustrated, descriptive and priced, of Garden, Flower and Agricultural Seeds, 1883, No. 645 Warren Street, Boston, Mass., is most profusely illustrated and full of the needful information regarding the qualities and cultivation of the different plants. The printer of this catalogue cannot be commended for the style of execution; it might have been thought well done a century ago, but it will not compare with most others of its class upon our table to-day.

THE SOUTHERN CULTIVATOR AND DIXIE FARMER is almost a folio of thirty-two pages, published monthly by James P. Harrison & Co., Atlanta, Georgia, at \$1.50 a year. It gives the reader an intelligent view of the condition and progress of agriculture in that southern clime, and numbers among its contributors the best writers of the South. We notice in the January number interesting articles on the Sugar-Cane Question, Fish Culture, &c.

WINE AND FRUIT GROWER, and Fancy Grocers' Guide, is a monthly journal devoted to vineculture, pomology and the kindred industries. It is published by B. F. Clayton, 20 Vesey Street, New York, at \$2 a year, and enters upon its fifth volume improved in appearance and full of interesting articles upon the subjects to which it is devoted.

THE GOOD FARMER, a quarto of eight pages, of which Mr. D. S. Marvin is the editor, devoted to Agriculture and Horticulture. Mr. Marvin's well-known ability as an horticulturist and writer is a guarantee that the new venture in Northern New York will be ably conducted. It is published at Watertown, N. Y., quarterly, at 25 cents per year.

NELLIS' WHOLESALE PRICE-LIST OF SEEDS, from the Mohawk Valley Seed Gardens, A. C. Nellis, Canajoharie, N. Y. Illustrated with wood-cuts and a

colored plate of Nellis' perpetual prize-lettuce, which does not form compact heads, but forms large bunches of leaves. It is claimed for it that it is tender and rich, and continues in use a long time.

THE FARM AND GARDEN is published monthly by Child, Bros. & Co., 125 South Fourth Street, Philadelphia, Penn., at 50 cents a year. It is handsomely illustrated and neatly printed on well calendered paper. Our own pages have been occasionally enriched with short articles from this valuable monthly.

THE WESTERN PLOUGHMAN, published at Moline, Ill., at fifty cents a year, enters upon its third volume in very handsome style. It has stories and practical articles mingled together to suit the tastes of various readers, but gives little attention to the fruits and flowers of its section of country.

GREGORY'S ANNUAL ILLUSTRATED CATALOGUE of Vegetable, Flower and Grain Seeds, warranted, grown and sold by James J. H. Gregory, of Marblehead, Massachusetts, 1883. A very profusely illustrated, descriptive pamphlet of sixty pages, with instructions for planting and growing.

THE FARMER AND FRUIT-GROWER, of Southern Illinois, is published weekly at Anania, Union County, Ills., at one dollar per year. It is devoted to farming and fruit-growing and the development of that portion of the State. It is ably conducted, and full of interesting matter.

A. M. PURDY'S DESCRIPTIVE AND RETAIL CATALOGUE for spring of 1883, of Small Fruits, Fruit and Ornamental Trees, Flower and Vegetable Seeds. An illustrated pamphlet of thirty pages, giving very full descriptions of the fruit and flowering-plants offered therein for sale.

JOHN A. BRUCE & Co.'s illustrated and descriptive Catalogue of Seeds for

1883, Hamilton, Ont., is very handsomely illustrated, and contains much valuable information regarding the methods of cultivation and the qualities of the different vegetables and plants.

THE FARM AND GARDEN for January is full of information concerning vegetables, fruits and flowers. It is published by Child Bros. & Co., 125 South Fourth Street, Philadelphia, at Fifty cents per annum, handsomely illustrated and neatly printed on smooth paper.

THE SCIENTIFIC AMERICAN, a weekly journal of practical information in art, science, mechanics, chemistry and manufactures, is published by Munn & Co., at No. 261 Broadway, New York; price \$3.20 a year. It is handsomely illustrated and full of information.

PACIFIC RURAL PRESS, published weekly, at \$2 per year, in San Francisco, California. The sample copy received contains twenty pages, well filled with articles on rural matters, besides literary articles and advertisements.

THE AMERICAN FLORIST AND FARMER, published monthly by William E. Bowditch, 645 Warren Street, Boston, Mass., at \$1 a year, contains twenty-eight pages of reading matter, with illustrations of new or interesting subjects.

THE CANADIAN FARMER, published weekly at Welland, Ont., by the Welland Printing and Publishing Company, is under the able editorial care of Messrs. W. P. Page and S. W. Hill. Price \$1 a year.

THE SUGAR BEET, published quarterly in Philadelphia, Penn., at 50 cents a year, is devoted to the interests of sugar manufacture from the beet, and is full of information on these subjects.

THE AMERICAN AGRICULTURIST, 751 Broadway, New York, is presenting to each yearly subscriber a plate copy of Dupre's last great painting, entitled "IN THE MEADOW."

THE POPLAR FELLED.

The poplars are fell'd, farewell to the shade,
And the whispering sound of the cool colonnade ;
The winds play no longer and sing in the leaves,
Nor Ouse on his bosom their image receives.

Twelve years have elapsed since I last took a view
Of my favorite field, and the bank where they grew ;
And now in the grass behold they are laid,
And the tree is my seat that once lent me a shade.

The blackbird has fled to another retreat,
Where the hazels afford him a screen from the heat ;
And the scene where his melody charm'd me before
Resounds with his sweet flowing ditty no more.

My fugitive years are all hasting away,
And I must ere long lie as lowly as they,
With a turf on my breast and a stone at my head,
Ere another such grove shall arise in its stead.

'Tis a sight to engage me, if anything can,
To muse on the perishing pleasures of man ;
Short-lived as we are, our enjoyments, I see
Have a still shorter date, and die sooner than we.

W. COWPER.

HOUSEHOLD RECIPES.

TO CURE HOARSENESS.—At this season of the year it may be useful to know that hoarseness can often be relieved by using the white of an egg thoroughly beaten, mixed with lemon juice and sugar. A teaspoonful taken occasionally is the dose.

BOSTON BROWN BREAD.—One cupful of sweet milk, two cupfuls of sour milk, three cupfuls of corn meal, one cupful of flour, one cupful of molasses, one teaspoonful of salt, and three teaspoonfuls of soda. Steam or bake slowly three hours. This makes a good sized loaf.

CREAM BISCUIT.—One pint of sour cream (not too rich), one teaspoonful of salt, one and one-half teaspoonfuls of soda, and flour enough to make a little stiffer than baking powder biscuit. Do not knead or work the dough much. Roll to medium thickness, and bake in a moderately hot oven.

BAKING POWDER BISCUIT.—Into two quarts of flour, sift five teaspoonfuls of baking powder, mixing it in evenly. Rub into this a piece of lard the size of half an egg. Mix with good sweet milk into a soft dough. Do not knead. Roll medium thickness, cut out with a biscuit-cutter, and bake in a very hot oven.

GREEN TOMATO SAUCE.—One gallon of green tomatoes and 1 pint of onions chopped fine, 2 pints of vinegar, 1 pint of sugar, 2 tablespoonfuls of salt, 1 tablespoonful black pepper, (ground), 1 tablespoonful of cloves, (either whole or ground), 1½ tablespoonful of table mustard, 1 tablespoonful red pepper,

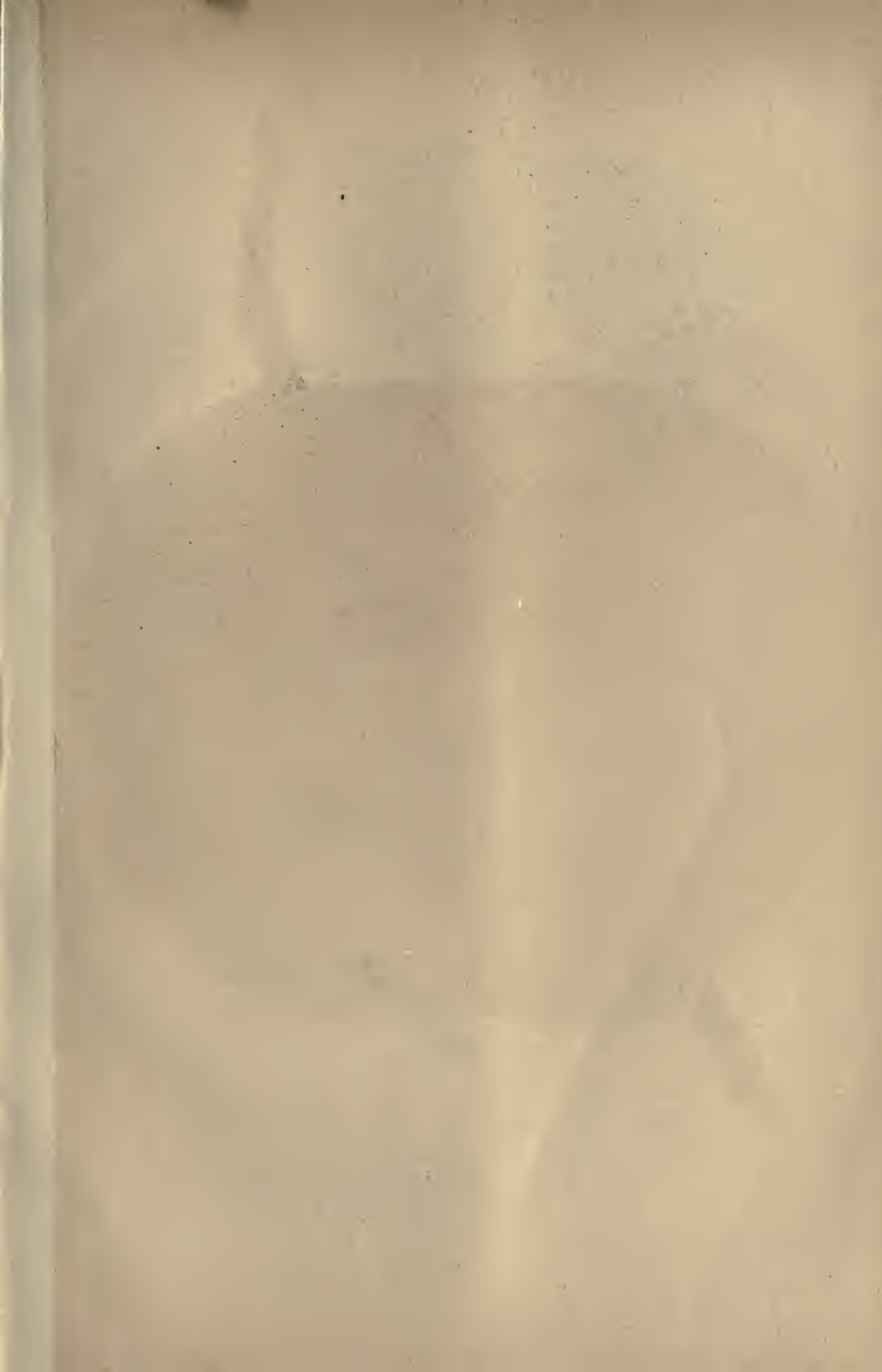
and boil all together until quite tender, it is best sealed up in air-tight jars. This is a delicious sauce for fresh meats in winter.

BREAKFAST MUFFINS.—One egg, two teacupfuls of sour milk, one-third of a teacupful (scant measure) of fried-meat drippings, one small teaspoonful of salt, two teaspoonfuls of soda, and flour to make of about the consistency of cake. Beat the egg till light ; add the milk, salt and flour, and stir all till smooth ; then stir in the gravy, and lastly the soda. Have the gem or muffin-tins hot and well greased ; fill each, and bake in a very quick oven.

RHUBARB JAM.—Rhubarb or pieplant jam is very nice. Peel the stems and cut up in half-inch lengths ; add an equal weight of sugar, and let it stand over night in a glass or stoneware dish. Next morning drain off the juice, and simmer slowly three-fourths of an hour, taking off the scum as it rises. Then add the pieplant and stew fifteen minutes longer. Rhubarb is seldom used for sauce after the small fruits begin to ripen, and the housewife can gather all she likes for canning, drying and preserving.

PARKER HOUSE ROLLS.—One quart of sifted flour, one-half cupful of good hop yeast, two tablespoonfuls of sugar, a pinch of salt, two tablespoonfuls of butter, and one of lard. Pour one pint of boiling milk over all these ingredients except the yeast, which add when the batter gets lukewarm. Let the sponge stand over night, and early in the morning add sufficient flour to knead into a loaf. When light, knead again, and roll out rather thin. Cut with a biscuit-cutter ; then roll oblong. Spread a little butter on one end and fold over. Let them stand till light ; then bake about 20 minutes.

GOOD HOP YEAST.—Grate six good-sized raw potatoes. Have ready a gallon of water in which has been boiled three small handfuls of loose hops, or what would be the same quantity of pressed hops ; strained through a cloth or sieve. Pour while boiling over the grated potatoes, stirring until well cooked. If the mixture does not thicken like starch, set it on the back part of the stove and let it cook slowly. Care must be taken not to burn it. To this, while hot, add one teacupful of white sugar and one-half teacupful of salt. When sufficiently cool, add one cupful of good yeast. Let it stand until a thick scum arises on the top ; then bottle, and set in cellar. One-half this quantity will be sufficient to make at one time for a family of two or three.





Red Bietigheimer.

A rare and valuable German variety. Fruit large to very large ; roundish, inclining to conical ; stalk short, stout, in deep cavity, calyx closed in large deep basin ; skin pale green colored ground mostly covered with purplish crimson ; flesh white, firm, sub-acid, with a brisk, pleasant flavor. Tree a strong grower and abundant bearer. This is one of the largest and handsomest apples, and worthy of cultivation. October to February.

"PRINTED FOR THE CANADIAN HORTICULTURIST."

THE Canadian Horticulturist.

VOL. VI.]

APRIL, 1883.

[No. 4.]

APPLES.

Notwithstanding that for two years past the crop of apples in Ontario has been a failure, there never has been a time in the history of the Province when the orchardist could so confidently rely upon remunerative returns from his apple trees as the present. The recent failures in the apple crop are not owing to any permanent calamity which has befallen our orchards, nor to any blighting disease that has overtaken our apple trees, but to causes purely temporary, and that may not occur again in a long time to come.

The orchardist in Ontario, who exercises a wise discretion in selecting his soil and location, has advantages which are not possessed by many, if any, others. He has here a climate that experience has proven to be remarkably adapted to the production of apples such as are of the highest value for marketing, especially in the transatlantic markets. There are no apples grown that can surpass in richness and excellence of flavor those grown in this Province, nor in firmness, and ability, when properly handled, to endure carriage and keep well. They boast of the fine appearance of their western apples, and they do look well, but when

compared with ours in all the essentials of a good profitable fruit they are found wanting. Even for the purpose of evaporating it is found upon experiment that they will not yield as many pounds of dried apples to the bushel as our own, and that the difference is sufficient to make it an important item in the calculation.

And this process of evaporation which has lately come into use, and is extending so rapidly and widely, is one of the causes which gives to the apple orchard an increased value. In former days the apples that were from any cause not fit to be barreled were of no use, save for the manufacture of cider. Now, however, a very considerable portion of this fruit can be evaporated, and in this form be taken to market, and realize to the owner much more than when made into cider. The use and consequently the demand for evaporated apples is constantly increasing. It has been found that when properly cooked the evaporated can not be distinguished from the fresh fruit, that housekeepers find it much more convenient and less laborious to use evaporated apples, than to pare, core and slice the fresh, in order to prepare them

for use. In the matter of transportation a great saving is effected also, for the water which constitutes so large a part, both of the bulk and weight, is driven off in the process of evaporation, and hence it is that this fruit is finding its way so rapidly to the front, following close after the pioneers of our new settlements, and becoming an item of daily consumption as much as other articles of food. Besides, this evaporated fruit can be kept for an indefinite length of time, so that the risk of decay is wholly removed. For all of these reasons, and because of its healthfulness as an article of diet it is becoming a regular part of ship stores, more especially for long voyages. It is also finding its way into the cities of continental Europe, where it is being gradually introduced upon the tables of those who feel that the fresh fruit is too expensive an article to be often enjoyed.

Thus it is that this invention is extending the use and thereby increasing the demand for apples. But there is yet another cause working continuously to enlarge the demand for apples, as indeed for fruit of every kind, and that is the growth of our towns and cities. These must ever be non-fruit producing, and in proportion to their size and wealth, fruit consuming centres, and the more abundantly they are supplied the greater in the end will be the demand for fruit. Hence whatever tends to enlarge our manufacturing and trading centres and build up and increase the population of our towns and cities, also tends to increase the demand for our fruits, and of none more than of apples.

It is within the memory of the writer when our towns were few in number, and our cities nothing more than small towns, that apples were accounted of little value, to be had by the waggon load for the gathering.

And now we have to add another factor in this matter of apple production and consumption. The settlement of Manitoba and the opening up of the great North-west is rapidly creating another market for our apples, in one form or the other or both. It will be a long time before that country will be able to supply its own population with fruit, and much less with apples. But very few apple trees have been found to be sufficiently hardy to endure the cold of that climate. If human beings do not feel the cold, as we are constantly and credibly told they do not, yet it is certain that most of the apple trees that have been planted there do feel it as much as it is possible for a vegetable to feel anything, at least they suffer so severely from the cold that they perish. They have first to clothe that country with forest trees that shall break the sweep of their fierce winds, and then seek out those varieties of apple that will endure the climate of Siberia where the mercury becomes solid, before they can begin to supply themselves. But the country is being largely settled by people who have been in the habit of using apples freely, and they will be eager to have them in their new homes, even if they have to be procured at some cost.

Hence we believe that a new and large market for our apples is being

constantly developed by all these changes that are going on in the methods of preserving the fruit, cheapening the transportation, introducing it to new consumers, and in the changes made by the increase in the number and size of our towns and villages, and the rapid settlement of large tracts of country quite unfavorable to any large production of apples. The demand seems to be likely to more than keep pace with the supply for many years to come, so that the owner of suitable land in Ontario need have no hesitation in planting apple trees, for the fruit is sure to be wanted and as sure as any other crop to yield a handsomely remunerative return.

Intelligent industry is important in this matter of apple raising as in everything else. The day has gone by when the easy-go-lucky style of cultivation will answer. Brains are needed to grow the fruit profitably, and brains are needed to sell it profitably after it is grown. The man who keeps abreast of the times by careful reading and observation, and who applies his information thus gained to his own circumstances by thoughtful consideration, is the only man who can hope to succeed. An orchard of apple trees will no more take care of itself, and yield a profitable return, nor do it if improperly cared for, than will a flock of Merino sheep or a herd of polled Angus cattle.

We are often asked what varieties of apple shall I plant for profit, but it is not possible to give an answer to such a question that is satisfactory to ourselves, without first ascertaining much

that is not communicated by the enquirer. It is important that we know what varieties seem to do well in that particular locality and on that soil. Also to know where the planter expects to market his fruit and how. In some parts of the Province the Snow Apple is so liable to be covered with black spots as to be wholly unprofitable, while in others it is perfectly fair. The Baldwin is a profitable apple in many places, in others it is far outstripped by the Ben Davis or the Wealthy. In some markets one variety will yield a greater profit than another that perhaps in quality is much better. As a rule bright and high colored apples will bring higher prices than yellow or green colored sorts. We would therefore urge upon all planters the importance of keeping themselves well informed on all that pertains to their business, and passing that information through the crucible of their own brains.

There are many candidates continually coming into the field and urging their claims upon our attention. It is not well to ignore them as humbugs, nor on the other hand to rush hastily after them. Every apple we now value for its intrinsic worth was once a new comer. It is wise to consider well what are the claims put forth, and if these seem to be likely to meet our wants, plant a few trees and carefully test their merits in our hands. Among the varieties not yet extensively grown in Ontario, but which seem to possess qualities worthy of attention we name the Grimes Golden Pippin, the Wealthy, the Canada Baldwin, the Wolf River,

the Weyauwega, Cox's Orange Pippin, Stump. Our colored plate is a good representation of a new German apple of large size, handsome appearance, and good quality, the Red Bietigheimer. The tree is a free grower and abundant cropper, and said to be very hardy.

CORRESPONDENCE.

THE BURNET GRAPE.

I was sorry to see in your last issue a letter from a member questioning the good faith of Mr. Bucke regarding the Burnet Grape. From my experience of this variety, it is *not worthless* in any respect, it is a most vigorous grower, and the vine I received from the Association outstrips everything I have in the shape of a vine—fine, large, well ripened wood. Also having planted about fifty vines last spring, five of them being Burnets, it was remarked by all who saw them that they made the most vigorous growth out of thirty varieties. It has regularly borne good crops of fruit, fine large bunches and large berries. This last two years only a few of the bunches would be marred by a sprinkling of small berries about half the size of the others, yet this would be the exception, not the rule, there being lots of good, perfect fruit. I noticed that the small berries were generally on old spurs. This year, to try to remedy that defect, I will entirely cut away all the old wood, and fruit on the new or last season's growth. The flavor is splendid, just like the black Hamburg, and as another correspondent terms it, "a fine acid flavor." And further, it is a good keeper. In proof of this I send you a couple of small bunches (the larger and more

perfect ones having been eaten), they are hardly as good flavored as when fresh, yet it is near five months since they were cut from the vine, and I ask what better fruit can we have.

I have a Brighton Grape vine which I might condemn, and though a large, strong vine, I have never got more than about a quart of fruit from it. The show for fruit is always very good, but the flowers don't set well, and in consequence the number of berries on a bunch is from one to five. I would be thankful if you could inform me how to remedy this defect in the Brighton. I consider it is through some error of my own, as I hear of others fruiting it successfully. Now being just an amateur, I have no axe to grind, neither have I any interest in this or any other variety, yet fair play is bonnie play, and I trust other members who have fruited this variety will give their experience in our instructive little book, and hope you will pass an opinion upon the fruit I send.

I am yours, &c.,

THOMAS HEDLEY.

Hamilton, February 12th, 1883.

GREEN PEAS.

TO THE EDITOR OF THE CANADIAN HORTICULTURIST

SIR,—By the time this meets the eye of your readers, the time will have arrived when many will be thinking about what varieties of peas they will use this year. I have grown many kinds, and have no hesitation in recommending "Bliss' American Wonder" as the best in the market, taking all things into consideration. They are very early, ripening usually in seven or eight weeks from date of sowing; very prolific when liberally treated. Mr. Jackson of this town, jailer, dibbled some in rows about a foot apart, and two inches apart in the row, in very

rich soil. The product was something wonderful, from each plant he gathered from fifteen to twenty pods, and almost every pod contained six peas. Seventeen pods having five peas in each will be equal to eighty-five bushels for each bushel of seed. In quality they are equal to the best.

The reputation of this pea is likely however to suffer, as another variety of pea of the same name is being forced into this market, considerable quantities of which were imported last spring from England, and many respectable dealers are now handling them, believing them to be genuine, no doubt, because of the respectability of the house from which they were obtained. However cautious this wealthy and respectable firm may be, they have evidently been swindled this time. I grew some of these imported peas last spring side by side, and also in the same row, with the genuine peas obtained from my friend Mr. Arnold. The seed was very different in color, and those which grew (about one-half) produced leaf growth very different, both in color and shape. The peas were from eight to ten days later, and the product was less than one-third that of the genuine. I gave the person (the importer) from whom I obtained the peas, some of the genuine sort to experiment with in his own garden, and the result with him and also the conclusion to which he arrived from his own experiment, was identical with my own.

T. B.

Lindsay, March, 1883.

PRUNING.

Will the *Horticulturist* kindly answer the following questions?

Downing recommends the last of February for pruning in this latitude. How would that have suited this year, the weather then and later on being so severe? Do you think the trees and

vines would be damaged? What is the best time for cutting scions off pear trees for budding in August? May celery and potatoes be grown in the same ground for a succession of years?

ANSWER.—February is usually too early for Ontario. It is better to prune after severe cold has passed. The time for cutting pear scions for budding in August is on the day you do the budding. Celery may be grown on the same ground, but not potatoes.—ED. *Can. Horticulturist*.

CUTTING OFF SCIONS.

Purdy's Recorder recommends that scions should be cut off *early in spring*, and kept for budding until the proper time. Is this right?

ANSWER.—If you intend to bud in June it is right, not otherwise.—ED. *Can. Horticulturist*.

ON FRUIT GROWING.

TO THE EDITOR OF THE CANADIAN HORTICULTURIST.

DEAR SIR,—I have been in the nursery pursuit for fifty years, and have largely studied why many varieties of fruit trees will not stand our northern cold climate. I discover from your Association that many, yea, very many people are in the shade respecting the true cause why so many varieties of fruit trees will not live through our cold, changeable climate. I will here state, forty or fifty years ago the most part of our farms were surrounded with forest trees, and in the winter season but few thaws. The trees froze up hard in the fall, and generally remained so till spring. In those years all kinds of fruit trees seemed to be hardy alike. Now for the cause: Our orchards were surrounded by forest; there could be

no sudden change of air from warm to freezing. If, in the winter, there was rain and the limbs of some kinds were soaked with rain, and the wind changed suddenly from south to north-west, the forest trees prevented a sudden cold till the fruit trees had time to dry out the water; then, after that, when the trees froze they were not bursted, or swelled by the ice, to shivers. The above is why. If trees are protected on the north-west side they will stand now our changeable climate; but of late years the axeman and the fires have devastated our forests, and now the winds cause our country to have frequent changes. Now, all loose, open, soft, porous fruit trees will not live many years in Eastern Ontario. Some one may say, how do you know that one kind of apple wood is harder than another? I here tell you how to prove it. I am running a small nursery of trees. The greater part is what is called the McIntosh Reds. Without exception, they bear the best flavored winter apple, and are the hardest trees to stand the climate known in Eastern Ontario, the crab trees not excepted. If planted on gravelly ground not one bud will perish with our hard winters. Now to instruct you how to know a hard wooded tree from a soft loose wooded tree: take your jackknife and cut off a limb of the McIntosh Red tree, then cut off a limb of the same size of any other kind or kinds of apple tree, you will find the McIntosh Red limb cut harder than beech or maple, and several of the varieties cut soft, or as easy as to cut basswood. Again, to prove that the McIntosh Reds are hardier than any of the other kinds of fruit trees, stand under a McIntosh Red tree, take hold of the smallest limb that will hold you up without bending, then try to hang on a limb of the same size of any of the other kinds, and you will come to the ground in a moment. If you

prove the above and ascertain it to be true, will you not acknowledge that the McIntosh Reds are tougher and hardier than any of the other varieties that you tried. Furthermore, to show you why the McIntosh Reds do not freeze to death; the wood is so tight and hard, and the bark is smooth, fine, and looks tight enough to prevent rain from soaking in. The wood is so hard, although it rains all day, it will not take much water in. This is why the McIntosh Reds are not affected by our cold changeable winters; while, on the other hand, the loose soft wooded trees are like a sponge. In winter, on a rainy day, the limbs soak full of water, if towards night the wind shifts from south to north-west, the water that is soaked in the limbs of the trees will at once freeze to ice, which ice expands the wood and bark, the limbs are swelled and bursted to death, and when the ice is thawed out the tree, it carries the sap along with the water. This is why the loose wooded trees will not live in the Eastern Township of Ontario. Furthermore, to prove that the sudden change from warm to cold is the cause why the soft, loose wooded trees die. Along the bank of the river St. Lawrence most any variety lives several years, inland the same kinds would not live one-fifth the time; along the river, though the change is sudden, the fog or damp from the water keeps it from freezing for an hour or two, which gives the trees time to dry the rain water out of the wood, and there is no ice made in the wood to swell and burst the wood to death. The above shows you that there is no ice in the top of those trees along the river bank, and that is the cause the soft kinds are not killed outright along the river St. Lawrence, while those in the country of the same kind will only live a few years. The soil to plant fruit trees on to do well, to form hard

solid wood, should be ground well drained, mixed with gravel ridge soil, *clay, sand and muck* are not sufficient. In this kind of soil there is not the right kind of element for the growth and health of the tree. There is not the right kind of element to form hard wood. If your ground has no stone in it draw a cart load of gravelly ridge ground and spread it round about each tree, and add with it one peck of slacked lime. This do for three following years. This will answer as a substitute, where there is not enough stone quality to form hard, compact wood. Otherwise the wood will be loose and porous and soak with water in winter, which will freeze and kill the tree as stated above. Although the soft wooded trees are planted on gravelly ground, they will not live long. Their nature will not take up with the sap enough of the stone element to make wood hard. I own the farm on which the original McIntosh Red stands. I have lived all the years of my life within a few feet of it. To my knowledge it has borne annually for sixty years a crop of the best flavored winter apple known on the continent of America. The above is no exaggeration from the truth of what is said respecting the McIntosh Reds. I have a young orchard, and have in it 1,300 trees of the McIntosh Reds, the remainder is a few early kinds for summer use. I have a seedling summer apple, grown on my farm by my father about eighty years ago, sweet, very juicy, a good bearer, soft and of good size; the tree hardy; lives longer than any of the kind, except the McIntosh Reds. Any person wanting to know more than stated above, write.

I am, your obedient servant,

ALLAN MCINTOSH,

Dundela P.O., Ont., Nurseryman.
Dundas Co., Feb. 6th, 1883.

GRAPE VINES.

MR. EDITOR.—Nothing was said at our meeting of the proper spaces for vines. We have them from the standard occupying 4 feet as general in France, and I believe in the Beaconsfield vineyard, and on Trellis, 5 to 7 feet high, with 12 to 20 feet range. The vine at Hampton Court, England, which many of our members must have seen, planted in 1768, when I saw it about 10 years ago, covered a space of 2,000 square feet, was in full vigor, with a crop, if I remember right, of over 1,200 bunches, certainly average 1 lb. each. Which is best, *the narrow or wide gauge*. Wide limits seems not to curtail the life nor lessen the fruitfulness of the vine.

JOHN CROIL.

WINTER MEETING OF THE FRUIT GROWERS' ASSOCIATION.

MR. EDITOR.—The attendance at our meeting was good and the subjects discussed interesting and useful.

The first taken up was, is the English sparrow an advantage to the fruit grower or otherwise.

After an interesting and lengthy discussion, it was almost unanimously agreed that Mr. Sparrow is a sure enemy to the fruit grower and agriculturist. While he satisfies his appetite at times with insects injurious to crops, the little benefit is far more than counter-balanced by his depredations, eating of the buds of fruit trees and shrubs, and pilfering the fruit. As an evil doer his total extermination was strongly recommended. So say we, but easier said than done.

The black spot, or fungus on the apple tree, can it be prevented and how? Here was a subject very much affecting ourselves. From different localities the reports were very conflicting. One grower spoke of having sold one hundred bushels of Fameuse entirely

free from spots, others said they had not a spotless apple. It was admitted on all hands that the disease was much more prevalent this year than formerly, but I am sorry to say that neither the cause nor the cure of the disease was discovered. One said the disease was mostly confined to old and ill pruned trees, another that it was from the want of shelter, while a third would have it from over crowding; neither of which theories met with support. That cold, wet or frosty weather coming when the trees were in blossom, and over manuring in some cases favored the disease was generally believed. The reason why some kinds, such as the Russets, were less injured by the disease last year, we don't think was satisfactorily accounted for, but it is quite evident that they and some others are much less liable to the disease than others. I am not prepared to give a full list of these, but from experience can recommend the American Golden Russet spotting none; the Talman Sweet, spotting little; the Wealthy promising well, hardy and free from spots. These three are all hardy and reliable in our district. Let readers remember I don't recommend but a few kinds, not more than a dozen as profitable in our cold north—the tree pedlar, much more accommodating, will give you them, hardy trees, he says, by the score. Pity that the Fameuse, our favorite and formerly best paying apple, should suffer so severely from the disease. I am afraid the McIntosh Red is not much better in this respect.

Another subject was grape growing. Can we make the cultivation of grapes profitable and with what varieties? That they are profitable for market use was agreed to on all sides, as well as that we should all sit under our vines if not our own fig tree. The kinds recommended as early, hardy and suitable to our location were, Concord, Delaware, Moore's Early, Brighton, Worden, Hart-

ford Prolific, and I think I may add the new grape Jessica, now offered by our enterprising secretary, Mr. Beadle, of St. Catharines. Some one said better have poor grapes than none, and put the Talman, *alias* the Beaconsfield, on this list; it is hardy and will surely ripen. This is the best we would like to say of it.

Our association deals too with forestry, although not appearing in our title now, it will presently. A bill just passed entitled the Ontario Tree Planting Act, will much encourage tree planting. It authorizes the planting of trees on the highways adjoining our farms, as also on the boundary lines, and makes provision for a bonus of 25c for each tree so planted under certain restrictions, and providing for the preservation of the same by a fine not exceeding \$25 and costs, or imprisonment for 30 days, for any one injuring or allowing to be injured by his cattle any such tree.

Who is to be responsible now for the widow's cows, the great bugbear to no fences? We will have to find her less expensive pasture than the Queen's Highway.

To convince us that such societies as the Fruit Growers' Association are doing good, we have only to compare the fruits and flowers of to day with those of our boyhood. It is like comparing the apple with the crab.

Mr. Charles Arnold the celebrated agriculturist and hybridist of Canada, succeeded a few years ago in raising a new dwarf pea, a cross between the two favorite varieties, Champion of England and Little Gem. It is named Bliss' American Wonder. I would not ask space to describe it more than to say, that when introduced it was believed by competent judges to be the best dwarf pea in the world. He sold his right to the well known firm, B. K. Bliss & Sons New York. Last year I planted four and a half quarts of these peas for which

I paid at the rate of \$32 per bush. I can endorse the much said in its favor. My return crop was two bush., this spring sold at \$10 a bush by Messrs. Bliss. Friend Seltzer will have a limited supply of these for sale next Spring, but the bulk of my supply I will plant, they will likely pay me better next year at \$5 than at \$10 this. But I have been dealing in small figures. Mr. Arnold has persevered and procured he says a pea far superior to the above. When asked at our meeting why he should give the Americans the benefit of his discoveries, he replied in his own quaint way, that he was always willing to sell in the best market, and to let the enterprising purchaser have the benefit, adding, "as soon as you are prepared to pay me as I have received for my last improvement, you, or a more enterprising neighbor, are welcome to stamp your name on it." I have received, he said, the second cheque of \$500 last week in payment for less than a bushel of these peas. These Mr. Editor are reliable figures—\$1000 for a scant bushel of peas. We should say peas are looking up. Such are some of the results of the work of such Associations. The merits of our association are not well known. To any one who has a garden patch or a few apple trees, and any taste for them, I will guarantee the one dollar subscription to the Fruit Growers' Association of Ontario, to be as good an investment as he ever made.

JOHN CROIL.

Aultsville, Feb., 1883.

GOOSEBERRIES—WORDEN GRAPE—ROSES.

TO THE EDITOR OF THE CANADIAN HORTICULTURIST:

On page 33 of the last number of your esteemed journal you invite amateurs to use the columns of the *Horti-*

culturist to make known their experience in horticultural matters.

As an amateur, and as one who has always taken a deep interest in horticulture, I gladly accept the invitation and offer my mite.

I will begin with my experience with gooseberries, of which fruit I have quite a number of varieties. Although agreeing in the main with Mr. Watson as regards the English gooseberry, that it can be successfully grown with care, still I think it best to rely chiefly on the Downing and Smith's Improved.

A year ago last spring I planted a number of bushes of these last named varieties, and the result of their first bearing last summer was really astonishing; some of the best bushes yielding as much as two imperial gallons of fine ripe berries to a single bush. Who can beat this? My experience with gooseberries is as follows: Ten bushes, well cultivated and heavily manured, are worth more than a hundred neglected ones. Plant English gooseberries, if possible, in a deep, cool, heavy soil, on the north side of a building or fence. If the soil is very light do not plant them at all.

My Worden grape bore last summer for the first time. It is both earlier and better flavored than the Concord, and is apparently quite as hardy.

I cannot close this without mentioning my Roses, which have given me more pleasure than anything else that I have grown. Last fall I took the first prize at our County show, the only place at which I exhibited Roses. The coming season I intend exhibiting at the Provincial and other large shows.

My favorite Roses are Alfred Colomb, La France, and Marie Bauman, and in the order named.

FREDERICK MITCHELL.

Innerkip, Ont.

STRAWBERRIES.

I have never cultivated but for family use. I thought of setting out an acre 3 feet apart and 18 inches in the row, keep the runners cut off, and two years afterwards planting between the rows and digging out the first planted, and so save the inconvenience of changing the ground. Do you think my selection good with Early Canada, Wilson's Albany and New Dominion. If I should try a few of the new kinds by the way of experiment, which two kinds would you recommend for our cold north?

Yours truly,

JOHN CROIL.

The new varieties of strawberry have not yet been tested in your climate. Suppose you plant Crescent Seedling, Manchester and Bidwell, and tell the *Canadian Horticulturist* how they succeed.—(Ed. *Can. Hort.*)

BARRIE AND STRATFORD.

BY AN OCCASIONAL CONTRIBUTOR.

In the January number of the *Horticulturist* for 1880, at page 7, may be found a very interesting article from the pen of Mr. A. Hood, of Barrie, in the latter part of which he compares the mean temperature of Barrie, Stratford and Toronto for the months of July, August and September, shewing that it is lowest at Stratford. Mr. Hood might have extended his comparisons to all the other months of the year, and having brought them down to the date of his writing, they would still have shown the same result; and the reason in all probability is that suggested by Mr. Hood, namely, that while Stratford is 1,182 feet above the sea level, Barrie is only 779. It is true Barrie is a degree farther north; but the difference in the level above the sea quite counterbalances this. It

is not likely that the beautiful Kempenfeldt Bay, lovely in itself, and rendering the pretty little town on its shores more attractive, exercises any appreciable influence on the climate; perhaps it may save the fruit blossoms from injury by the May and June frosts. Certain it is that any person who may have the good fortune to visit Barrie in July or August, as the writer did last summer, must be convinced that its soil, climate, and situation, is very favorable for fruit growing. Nevertheless the man who said that Stratford may or will become a great fruit growing centre was quite correct. The samples of apples, pears, grapes and seedling peaches shewn yearly at our horticultural exhibitions, compare favourably with those produced in any part of Ontario; and all that is needed to make fruit growing a remunerative business in this neighbourhood is a wise selection of hardy and suitable varieties, and care and skill in their cultivation.

The situation is peculiar—almost on the height of land at the centre of the peninsula between the great lakes, outside the salt and oil bearing strata—an hundred feet at least (perhaps much more) to the rock below—soil generally somewhat heavy. Fruit and other trees which flourish here should, so far as climate is concerned, flourish also in almost any part of Ontario; and on that account it is to be regretted that we have not in this neighbourhood an experimental plantation of fruit and forest trees similar to the one at the Model Farm, near Guelph.

The winter of 1880-1 was, as every one interested in fruit culture knows, a very disastrous one to fruit trees. It is argued by some that the damage is to be attributed to the *warm* autumn followed by the severe winter; by others, that the long continued and

steady extreme cold of January, 1881, is alone sufficient to account for it. It may not be uninteresting not only to those in this neighborhood, but to others residing in the colder parts of the Province, to learn the writer's experience—limited though it is—of the effects of that winter on his own comparatively few trees.

The aspect is sloping S. and S.E.; soil good clay loam; good natural drainage, and all spring or surface water cut off by a deep tile drain along the brow of the slope; trees planted (most of them) in 1876, and cultivated with roots each year; manured fairly, but not heavily, with stable manure and ashes.

Dwarf Pears.—1. Ananas D'ete, Graslin, Beurre D'Anjou, Flemish Beauty, Supreme de Quimper, Louise B. de Jersey, Duchesse and Josephine de Malines, came through uninjured. 2. Eliot's Early, Seckel, Beurre Clairgeau, Onandaga, Vicar and Bartlett, all more or less injured, the two last named very badly. 3. Doyenne D'Ete killed outright.

Standard Pears.—1. Flemish Beauties came through triumphantly. 2. Elliot's Early and Clapp's Favorite both injured, but recovering. 3. Bartletts, Seckel, Rostiezer and Doyenne D'Ete killed (these on lightest soil on the grounds).

Peaches.—Eight or ten standard varieties (splendid crop preceding year) all killed, roots included.

Plums.—Some killed; all more or less injured, except Glass' Seedling.

Apples.—Early Harvest, Red Astrachan, Maiden's Blush, Am. Golden Russet, St. Lawrence, Keswick Codlin, Fameuse, Tetofsky, Fall Pippin, D. of Oldenburg, Plumb's Cider, N. Spy, Hawthornden, all stood well. R. I. Greening, almost killed and wont survive. E. Spitzenburg and Wagener

killed, the last named like the peaches to the root. The Wageners (three) were like the Keswick Codlins, Hawthorndens and Tetofsky, planted half-way between the larger growing varieties in a situation precisely similar, and while the Codlins and others not only came through and bore well, the Wageners suffered as above. They are generally regarded as hardy. If others have had the same experience as the writer's it should be made known.

Grapes are perfectly hardy here, if laid down and covered lightly with corn stalks or other such like covering. In 1881 crops of Concord, Delaware, Clinton, Roger's 4, 19 and 15, Salem, Eumelan, Hartford, Croton, &c., were all excellent. The only danger is from the frosts of May and June, from which of late years we have not suffered. Last year, however, there was a good deal of injury from mildew; Concord, Croton, Delaware, Clinton and Roger's 4 and 19 were free.

Walnuts, Butternuts and Sweet Chestnuts, planted here in 1876, are all doing well and seem perfectly hardy—the Chestnuts making the slowest growth. They have, however, borne two or three nuts the past year. The Butternut is indigenous here; the Walnut and Chestnut are not. A number of young Walnuts procured by the writer from, and by the kindness of, Chief Johnston, two years ago, have, where properly planted and cared for, grown without a single failure. There is no reason why the Walnut should not be planted and flourish over large portions of the Province to which it is not indigenous. There are about a dozen trees in a neighbor's grounds in this town planted about 1854-5, which are 12 to 16 inches in diameter, beautiful, perfectly healthy, and bearing heavy crops of nuts every year. This growth does not equal that of similar trees in other parts of the Province as shewn in the Report

of the Association for 1882, but as these trees have not continuously received the best of attention it is perhaps satisfactory.

Stratford, Ont., 12th February, 1883.

THE WHITE PINE AS A FOREST TREE.

BY JACOB W. MANNING, READING, MASS.

Our native White Pine (*pinus strobus*), which was introduced into England by Lord Weymouth in 1702, and is there called the Weymouth Pine, extends to the 50th degree north latitude, west to Lake Winnipeg, south from Minnesota to the New England coast and along the Alleghanies to Northern Georgia.

It is one of the most profitable of all the pine family as fuel or as a timber-tree. A piece as long as a stave for a pail, that can be cut from between the knots measuring a year's growth, is valuable, as well as the longest clear board plank or framing timber. It is always reliable, does not warp or crack as spruce or hemlock, and is light and durable as a building material.

Many open lands and forests abound in trees that will transplant safely, if six to twenty-four-inch trees, and even larger, are taken up with a ball of earth, which should be retained when the trees are planted, thus allowing the roots to be undisturbed; and I find after ample experience, if the holes are opened in the fall and allowed to remain open over winter, especially in hard land that is not to be cultivated, the frost will mellow the earth and put it in much better condition for the growth of trees when planted the next spring.

On rough land, where stumps and rocks abound, the distance apart would be regulated by the lay of the land; they should be planted from three to seven feet apart. It is best to keep all cattle from a young forest.

This work could be done as the ordinary farm work with the usual force of men.

Thus many broken lots of land now treeless and so rocky and worn out that they would not afford a paying crop of rye or even buckwheat, and when used as a pasture would not pay the interest of \$500 per acre for any number of years, could be made to increase in value year after year, with a small outlay at first and little care after, so that it would be an investment from which a young man would realize a great gain, and no better legacy could be left by an old man to his sons; or if he wished to realize on it he could sell it at a much advanced price over the original value of the land and the labor put on it in planting the trees.

The growth of a pine in good soil in ten years after transplanting is ten to twenty feet in height, with a spread of branches six to fifteen feet, and a diameter of three to eight inches where they stand alone.

Allowing trees to grow in an open situation, with a wide spread of branches from the base up, gives the tree great vital force but makes knotty lumber; but in growing timber it is most desirable if free from knots, and this must be attained by close planting.

I have seen a White Pine come up from seed in an old worn-out pasture, full of rocks and running briars, that grew in forty to forty-two years to more than two feet in diameter, affording two ample board-logs and a heavy horse-load of fuel, and all about it was a little forest of seedlings that required thinning out or transplanting, and all this from one seed that must have been carried many rods by the wind forty years before. Now these suggestions will apply to many almost useless pieces of land on which our New England farmers

are paying taxes but receiving no corresponding income. But on many pieces of barren plain land too poor to grow crops, but on which trees can be grown and cultivated, tree-growing can be made more profitable if carried on systematically. The land should be thoroughly ploughed, the trees planted four feet apart each way, the cultivator run about four times a year until the trees shade the ground sufficiently to keep the weeds down. Wherever plantings are made the trees should be thinned often enough to allow their full development.

In all parts of New England, by taking away or planting the trees indigenous to the several sections, great changes are made in the landscape. This change is in the hands of land-owners, and all should have an eye to effect some improvement in their day.

Little is said about aid from Government to renew the forest growth, although it is a giant task, but there is talk and even delay in tree-planting, in hope of aid and bounties or reduction of taxes to encourage it, also hesitation about what trees to plant. We say what grows well and sells well is safe to plant more of.

The most successful and praiseworthy of street, shelter-belt or forest planting that have been made, and, I might say, ever will be made, were by individual effort and purpose, and single-handed labor of one man here and there often in a very obscure way.

This work is greatly to be praised, and if any outside encouragement can assist to plant a few thousand acres with millions of trees each year, it will help to make more extended plantings appear easier to accomplish.

THE PHYLLOXERA IN FRANCE.

The Phylloxera is making serious havoc with the vineyards in France.

The *Vigne Francaise* (*French vine*) announces that the year 1882 will be remarkable for the increase of the ravages of phylloxera. The scourge has destroyed from 50,000 to 60,000 hectares of French vineyard every year, but this year the average will be surpassed. From all parts are signalized new spots of the disease, and in the vineyards already affected, but not properly attended to, the plague is spreading rapidly. In the departments of Gironde, Haute Garonne, Tarn, Oude, Oriental Pyrennees, and in the vineyards left in Herault, people are more than before alarmed by the progress of the terrible insect.

Indeed, such is the discouragement among vineyardists and wine makers, that they are turning their attention to the manufacture of wine from beets. It is said that the red sugar beet produces by fermentation an excellent wine, and it is seriously proposed to abandon the cultivation of the vine altogether.

M. Auguste Delenil, agriculturist, member of the Agricultural Society of France, &c., writes to the *Field*:—"Everyone has heard of the great losses our national agriculture has sustained during the last twenty years from the ravages of the phylloxera; more than half of the French vines have already disappeared, and none can foretell the extent of the devastation to come. Vainly have all kinds of remedies been tried, but without success. In spite of the thousand and one recipes employed in turn to combat and to destroy it, the phylloxera continues to ravage at will our splendid and luxuriant vineyards. In the face of such a disaster, an energetic agriculturist, whose labors have already received the sanction and encouragement of our learned societies, after many fruitless efforts to remove the evil, has succeeded, not in destroying the effects of the phylloxera, but in bringing forward an-

other wine-producing plant. Thus, leaving the vine to its fate, he turned his attention to find out if possible another plant to supply the elements of prosperity which we are losing by the disappearance of the precious vine. At last this plant has been found. It is a variety of red beetroot, unrivalled in the whole world for its incomparable qualities, which will in time replace all that we have lost in the vine. Beetroot produces alcohol of superior quality; why, then, should not its pulp, treated like the must of the grape, produce an equally luscious beverage? In fact, this has been done; the very sweet red beetroot produces by fermentation a wine quite as good as many of the *soi-disant* wines of our southern vineyards. It possesses the additional advantage of accommodating itself to all soils, and flourishes in most climates. We wish, then, to make this fact known, if it be only to stimulate new discoveries or develop further resources in wine growing. With the view of popularising this plant, the propagator places himself gratuitously at the disposition of agriculturists, to furnish them with the seeds they may require. Application can be made to M. Auguste Deleuil, Agronome, à Gardanne, près Marseille, France."

POTATOES FOR GENERAL CULTURE.

BY C. W. YOUNG, STRATFORD, ONT.

For several years I have experimented more or less in potato culture, and last year I grew a patch of twenty-six varieties, choosing such kinds as recommended themselves to me in the seed catalogues, or were in general cultivation in the neighbourhood of Stratford.

The soil in which they were grown could hardly be called fair garden soil, it was of the hardest clay, and had been badly used for several years, turning up in large clods, and difficult of drainage,

owing to want of fall. In the fall of 1881, I manured it at the rate of ten or twelve loads to the acre, and spaded it into ridges. In the spring I gave it a good dose of leached ashes in something like the same proportion. The potatoes, a pound of each, by weight, were cut into single eyes as nearly as possible, and planted about six inches apart in drills three feet apart, lightly covered. For convenience they were cut just as they were put into the ground. The object was not the obtaining of a large yield, which was hardly to be expected under the circumstances, but the testing of the merits of the various kinds under similar circumstances. The result will be found below.

VARIETY.	SETS.	LES.	
Beauty of Hebron	38	28½	No Rot.
Grange	35	30	"
Irish Cluster	41	20	"
Ontario	37	33	"
Rennie	44	33	"
Surprise	48	29	"
White Star	42	25	Slight Rot.
Chicago Market	53	43½	"
Dunmore	29	30	"
Early Vermont	53	38½	"
Farina	44	24	"
Fluke	39	17½	"
Magnum Bonum	27	18½	"
Pride of America	31	21	"
St. Lawrence	38	16	"
St. Patrick	53	31	"
Vick's Prize	32	18	"
White Elephant	41	42	"
Early Rose	37	30	Badly Rotted
Late Rose	35	18	"
Eureka	46	21½	"
Munmoth Pearl	36	18	"
Peerless	44	15	"
Ruby	44	21	"
Snowflake	42	24	"
Watson	47	22	"

I do not attach any very great importance to the result as to rot, as the experience of other growers in the neighborhood didn't agree with it, but I give it just as it was.

It will be seen that Chicago Market gave the largest yield with me, which was somewhat of a surprise, as the vines were so badly eaten away by the bugs that I looked for almost a failure. I don't think, however, that this variety

has more charms for doryphora than any other, but from their location they happened not to be looked after so strictly, that was all. The tubers are oblong, of a light flesh color, slightly russet skin, few and shallow eyes, flesh dry and mealy, and altogether a most desirable variety. I notice that in his latest catalogue, James Vick, from whom I got the seed, speaks of the Chicago as earlier than the Early Rose, of this I cannot speak, as my potatoes were all dug about the same time, and were not tested for earliness. It is said to do well on all kinds of soil. A faithful representation of this variety will be found in Vick's Floral Guide, for 1883.

Beauty of Hebron is so well known, that little need be said about it, it is early, prolific, a good keeper, excellent flavor, grows close together in the hill, and is as general a favorite as it deserves to be.

White Elephant is a veritable Jumbo among the Murphies. It yielded almost as largely as Chicago Market with me last year, and some of the tubers were immense. There were very few small ones. It is among the late varieties, keeps very well, is dry and floury, and not at all coarse as would be expected from its size. The only objection I can find to it is the deep set eyes, which cause considerable waste at the hands of careless kitchen maids when preparing them for the table.

White Star is an elegant looking potato, and was very highly recommended by its introducers last year as the coming potato. Its quality and appearance leave nothing to be desired, but I have not seen that its yield came up to what was expected.

Mammoth Pearl is a very handsome shaped tuber, and I notice in a late rural that it stood at the head of the

list with an Ohio grower ; with me it did not do so well.

Early Vermont I could place among the good early varieties, the tubers are generally large, and the quality very fair.

Dunmore is the prettiest sound potato I ever saw, smooth and white, with few, shallow eyes, as shapely as an apple, and a good yielder. For evaporating, where peeling machines are used, there could be nothing better.

St. Patrick is decidedly a good looking fellow, not especially large, but uniform in size, smooth and white, eyes shallow, dry and mealy.

Farina is an oddly shaped tuber, long, thin and pointed. It is very mealy and fine for baking, but would be no use as a market variety.

Pride of America is a decided acquisition, very shapely, and quality excellent. As to shape and general excellence, however, I must undoubtedly give the preference to the Ontario or Dempsey as it is sometimes called, which was sent out by the Association in 1881, I believe. The Rennie looks to me to be the same potato with a different name. It is red, slightly rough skin, oval, and unusually regular in size and shape. I never saw any kind which varied as little in size. The eyes are on the surface, what there are of them, and the tubers are as solid as a brick, in July. It is of rather more than average prolificness, and any judge of a potato would put it down as first-class without a second look. The Association did a good day's work when it presented the Ontario to its members.

With regard to the Early and Late Rose, the general impression seems to be that their usefulness has gone, and they will soon be classed with the Cup, Meshanock, Kidney, Merino, Chili,

Pinkeye and others, which were the favorites of our fathers and grand-fathers. The Roses I would not grow when there are so many better, and with them I would class the St. Lawrence, Peerless, Ruby, Snowflake, Eureka, &c.

I notice in a late Rural New Yorker that the Blush, which it sends out in its free distribution this year, yielded no less than 700 bushels last season to the acre. I have one or two tubers and shall grow them this year. The Rural gave its subscribers the Beauty of Hebron and White Elephant, introducing them to the public, and if the Blush is as good, it will do Carman plenty of credit.

For early varieties, I would say, grow Chicago Market, Beauty of Hebron and Early Vermont; for second early, Hebron and White Elephant, introducing them to the public, and if the Blush is as good, it will do Carman plenty of credit.

For early varieties, I would say, grow Chicago Market, Beauty of Hebron and Early Vermont; for second early, White Star, Pride of America and St. Patrick; and for late, Ontario, White Elephant, and Dunmore; of course there are dozens of other varieties, many of which may be equal or superior to those I have mentioned, but I quote my own experience merely, those who grow any of the above kinds won't make any great mistake.

Just a word or two about seedlings. It used to be considered quite a difficult matter to raise potatoes from seed, but there is no trouble whatever about it. The hardest thing is to get the seed, which most people will have to buy, for there are few kinds nowadays which will produce and ripen seed balls. I had only one out of 26 varieties which set any fruit, and that didn't ripen. (I should like to correspond with any member who has any potato seed.) The seed should be sown in a hot bed the same time as tomatoes. When a couple of inches high, transplant to a rich light spot in the garden, taking care not to disturb the rootlets, shelter from frost if it comes, keep a sharp look-

out for the bugs, and cultivate freely. The plants will be as large as any in the garden in the fall, and quite a number of the tubers will be of fair marketable size. They must be kept till spring, the same as ordinary potatoes. A trial of a year or two will show their quality, and any one may thus originate new kinds for himself, and give them any name he likes.

PRESERVATION OF FRUIT.

LETTER FROM MR. B. GOTT, OF ARKONA.

I learn that a fruit canning establishment is likely to be started in our borough, with every prospect of success. This is timely and not without its significance. It is quite clear from our past experience that the capability of our section for fruit production is very extensive. Should the people attempt the culture of fruits to the extent of our capabilities, the question what we would do with our fruit would at once force itself upon us with unwonted pressure.

Fruit production is only limited by the extent of the market, and this question of market is at once determined by that of fruit preservation. If our luscious summer fruits can only be brought over the hurry and glut of their season of ripening, by means cheap and practical, the question of marketing them can be profitably settled at our leisure. In this way all the fruits we can produce can be readily and profitably disposed of, either in our home or distant markets, and if not at one moment they can be kept over until they can be sold. Fruit production thus stimulated would at once spring into renewed activity, and where there is now only a bushel produced, tons would be gathered, and all sure of finding a ready and a profitable disposal. In the State of New York, this subject is thoroughly and practically

settled. The fruit growers of that fertile region are fully alive to the importance of fruit preservation, and they practice it to the extent of millions of lbs. annually. At the late meeting of their Horticultural Society, at Rochester, this subject was thoroughly discussed and an Association formed to take charge of its interests. When the reports of their county fruit committees were read, we were struck with amazement at the extent and importance of their fruit preserving processes. During the whole winter their evaporated fruits are exposed for sale in the markets of the larger cities and towns, and find a ready and welcome demand in the homes of all classes of their people. There are at present but two popular methods of fruit preservation contended in this country, viz.: 1st. By canning. 2nd. By drying or evaporating. We much prefer the latter of these methods for the following reasons: 1st, the fruit is prepared for operation with less expense. In the case of small fruits they are at once placed in the dryer, and in a few minutes the fruit is taken out, and is ready for packing. In the case of large fruits they are simply pared and quartered, and rapidly evaporated to a dry state ready for shipment. No expense of cans or labels or other packing is needed, and the consumer gets the goods in their simplest form, ready by the addition of a little water, for preparation of the table or any domestic purpose. 2nd, it is easier and cheaper to pack and ship. For this purpose it is simply placed in boxes or barrels and sent direct to the dealer, be he ever so far away, and without any fear of breakage or loss. 3rd, it can be more readily handled, exposed and sold by the dealer, and with less risk of suspicion or delay. People soon learn that it is quite possible to place beautiful and tempting labels on packages that

contain goods very dissimilar in character and value. No suspicion of this kind can attach to evaporated fruits. It is freely exposed and the purchaser can be assured of its qualities, as he can see what he gets. 4th, it gives better satisfaction to the customer. He thus knows exactly what he has paid for, and there is no chagrin upon opening the package to find the goods are not as represented by the dealer. 5th, this fruit can be sold in smaller quantities to suit the desire of the smallest customer. In this way the area of consumption is much enlarged. Many a poor man could see his way clear to purchase a few pounds of dried fruit that could not lay out a large sum on tempting and expensive cans of fruit. 6th, there is no useless expense for cans and labels, &c., to be added to the expense of the fruit, and to be paid for by the poor man who buys. He gets exactly what he paid for and no more or less.

Many who are well acquainted with certain samples of dried fruit will be ready to object to evaporated fruits on the same grounds. This is not just, as well evaporated fruit bears no resemblance to that which is merely dried by the old processes. The evaporated fruit is cleaner, whiter, richer, sweeter and better in every quality.

I find a statement in one of our public horticultural documents of recent issue, giving a fair idea of the questions of costs and profits in connection with an evaporator in the State of New York. I think, perhaps, it would be well to transcribe this statement in this place for the benefit of my readers.

"Statement of the cost and profit of one season's working of one of the No. 2 Pacific Evaporators:—

No. of bushels of apples bought	6,755
" " " shrinkage	337

Total evaporated 6,418

Average cost of apples per bush	17c.
Number of lbs. made from above....	38,579
Total receipts for sale of fruit ..	\$4,598 00
Total expenses for storage, handling and manufacturing	1,989 00
Net profit	\$2,609 00

Average No. of lbs. per bushel 5 96-100
 Average cost of preparing and drying per bushel 11 cents

The skins and cores were utilized for vinegar for some time, and afterwards dried sold for that purpose, from this source \$200 additional were made to be added to the net profits, amounting to \$2,809 00.

[Signed] ROGERS & BUTLER,
 Alden, Erie Co., N. Y., Feb. 10, 1880."

I have much pleasure in presenting this statement, as I believe it to be trustworthy in every respect. I also believe that as good a showing, or perhaps a better, could be as easily made amongst us, and for the simple reason that our raw fruit would not be likely to cost us near so much per bushel as it cost them. I should like to see it tried.

DIELYTRA SPECTABILIS.

The *Dielytra* or *Dicentra spectabilis*, or, as it is popularly called, Bleeding Heart, is a very fine and showy hardy herbaceous perennial plant belonging to the natural order Fumariaceæ. It was first introduced from the north of China



DICENTRA.

to the gardens of the London Horti-

cultural Society by Mr. Robert Fortune in 1846. Mr. Fortune first met with it in a grotto garden on the Island of Chusan, growing among the artificial rocks, near the beautiful *Weigela rosea*. Its Chinese name is "Hong pak Moutan Wha," or the red and white moutan flower. It is one of those plants of which the Chinese mandarins are so fond, and which they cultivate with so much care in their gardens. It is said that it was first made known to Europeans by the Russo-Siberian, Dr. Karmanyschew, who studying it at Upsal, communicated the fact to Linnæus. Be this as it may, it does not however appear to have been seen alive until it was discovered by Mr. Fortune, who brought it home with him.

In a rich, deep soil this beautiful species forms a plant growing from two and a half to three and a half feet in height, with recurving and branching stems, producing its flowers in spreading and axillary racemes, each raceme being from five to seven inches in length, and containing from twenty to thirty heart-shaped flowers, of a bright pink color. In autumn the stems die to the ground and the plant remains in a dormant state until spring, when it again appears above the ground. It flowers in May and June. In the garden it merely requires a light, deep, rich soil, and a yearly dressing of well-rotted manure or leaf mold. As a pot plant for the window garden, or as a plant for forcing, the *Dielytra* is almost without an equal on account of the ease, with which it bears this treatment. For this purpose the plants should be taken about the end of October and placed in a box; cover the roots with earth and allow the box to remain exposed until it has been frozen thoroughly. When this has been done, the box can be brought inside, and the plants divided, if large, potted into suitable sized pots,

using ordinary potting soil, and giving good drainage. When potted, water thoroughly, and remove to a cellar, or place under the stage of the greenhouse. Allow them to remain there until the pots become filled with roots and the shoots begin to appear, when they should be removed to a light, sunny situation. As the plants increase in growth, water should be more freely given, and once a week they should have a watering of liquid manure. When the flowering season is over, place the plants under the greenhouse stage or remove them to the cellar, gradually decreasing the supply of water; plant them out in a well prepared border about the first of May. If necessary, divide the plants before planting out. This plant can also be propagated by cuttings of the young shoots, when they become sufficiently hardened; but for amateurs propagation by division is the simplest and easiest mode of increase.

The generic name, *Dielytra*, is derived from *dis*, double, and *elytron*, a sheath, in allusion to the two sheath like spurs at the base of the flowers; and the specific name in allusion to the showy and remarkable appearance of the plant when in bloom.—*Vick's Magazine*.

STONE'S HARDY BLACKBERRY.

B. F. Adams writes to the *Western Farmer* that he planted an acre of the Snyder and Stone's Hardy blackberries, and that about twenty per cent. of the Snyder were killed by the following winter, but not one of the Stone's Hardy.

J. S. Stickney says that he thinks he can safely recommend Stone's Hardy. He had visited Mr. Stone's grounds the past season, and saw the Snyder and Stone's Hardy growing side by side; both were loaded with fruit, but

the Hardy seemed to have the heaviest crop, the canes of plants over two and three years old were black with fruit. The wood of the Hardy was short jointed and quite stocky. He had more confidence in the Stone's Hardy than in the Snyder, and considered the quality of the fruit of the Stone's Hardy was better than that of the Snyder.

Mr. M. L. Tibbett, of Minnesota, says: "The Stone's Hardy Blackberry came through last winter without injury unprotected, though the mercury was down to *forty* degrees below zero several times; it is evidently an iron-clad."

KIEFFER'S HYBRID PEAR.

As the Kieffer has come to stay, and is sure to be extensively planted, a few words on its demands and characteristics may not be out of place. If grown in an indifferent situation, on poor soil, with little or no manure, and improperly gathered and ripened, it undoubtedly will disappoint the grower. On the other hand, give the Kieffer a fair situation, plenty of plant food, and it will yield an elegant fruit. Its tendency is to overbear, and often it should be effectively thinned. It may not possess the highest excellence of quality, neither does the Baldwin apple nor the Concord grape: but a pear like the Kieffer that comes into bearing young, and produces big crops of quick-selling fruit, is bound to be popular.

The past Fall, in our Philadelphia markets, the Kieffer wholesaled for from \$5 to \$10 a bushel, and retailed from 10 cents to 50 cents each. As Downing aptly says: "To have it in perfection, it should be gathered when fully grown, and ripened in the house." I can readily see how there may be differences of opinion regarding the quality of the Kieffer, for a poor Kieffer certainly is poor

eating. On the other hand, a good one is exceptionally good eating. It may be claimed that even when properly grown and properly ripened, the fruit is variable in quality. It doubtless is, but I think no more so than the Duchesse d'Angouleme. As a cooking and canning pear, to my taste it has no equal, surpassing even the Bartlett for this purpose.

While perfection in pear growing may not have been reached by the introduction of the Kieffer, it certainly must take front rank as a profitable market fruit. The most extensive and successful pear grower in this neighborhood stated to me last Summer that, judging by the way the Kieffer was doing for him, there was more money in it at fifty cents a bushel than in any other fruit that he could raise.—HOWARD A. CHASE, in *Rural New Yorker*.

DRIED FRUIT ABROAD.

It is a mistake among many farmers and fruit-raisers in the United States to think that the different varieties of fruit, such as apples, pears, peaches, plums, cherries, gooseberries, &c., are grown in greater perfection in Europe, than here. It is not the fact. We raise these as abundantly here and in as much perfection as they do in Europe and with not more than half the labor and expense. It is true, however, that more pains are taken there, and their modes are more thoroughly systematized; but the cost of producing a crop, we repeat, is very much greater there than here, but still the profit may be greater, as nearly all kinds of fruit sell at a much higher price there than here. For years we have been shipping enormous quantities of apples to Europe, and this exportation is steadily increasing and will continue to increase until the trade shall become of National import-

ance. In dried fruits, such as peaches and apples, the exportation has already acquired large proportions, and in ten years more it will go on multiplying in extent until fruit-raising will become a far greater and more profitable branch of industry than at present. With such a market open to us we can never grow an over-abundance of apples and peaches; while these, in addition to cranberries, in their natural condition, fresh from the trees and vines, ought to be and no doubt will be produced in sufficient quantities to meet any demand. The very cheapness that we can send them abroad for will open for us an unlimited market for all with which we can supply it.—*German town Telegraph*.

GRAPES FOR MARKET.

The question is often asked which is the more profitable grape to grow for the market, the Concord or the Delaware. Much will depend upon the market to be supplied, and much upon the character of the soil upon which the plantation is to be made; but when the soil is such that both will thrive well, and the market will pay twice as much for Delaware as for Concord, an answer to the inquiry seems to be given in the following paragraph taken from an exchange:—

His Concord average five tons to the acre, and sell in New York at an average of five cents a pound. That would be a gross income of \$500 a year. Probably it would net \$300 to \$350 an acre. His Delawares would sell for twice as much as the Concord, but the yield, one year with another would be but little more than half. Calling the yield of Delawares three tons per acre and the average price ten cents, the gross receipts per acre would be \$600. Allowing two cents a pound for express, commission, &c., and there would be a net result of \$480 an acre; a better showing than Concord.

SALSIFY.

The Salsify or Vegetable Oyster is one of our winter and early spring vegetables, and one that should be cultivated in every garden, however small.

To those who are not acquainted with this delicious esculent, it may be described as having a long, white, tapering root, somewhat resembling a Parsnip in shape, and having the flavor of an oyster when prepared for the table. It is by some considered an excellent substitute for the oyster, and, in addition to this, the young flowerstalks, if cut in the spring of the second year, are prepared and used similar to Asparagus, which they somewhat resemble in taste.



SALSIFY.

In order to obtain a satisfactory crop of Salsify, with long, smooth roots, proper preparation of the soil is an essential point. This is best done by digging or plowing the soil to the depth of twelve or fourteen inches, and thoroughly working in an abundant supply of well-decomposed stable manure.

The ground should be prepared in the fall, and left in ridges during the winter season. As soon as the weather becomes settled in the spring, the ground should be neatly leveled off, and the seed sown in drills from twelve to eighteen inches apart, and covered to the depth of half an inch. When the young plants are about two or three inches in height they should be well thinned out, leaving them standing about six inches apart. During their season of growth they require to be deeply hoed, and the ground should be kept mellow and free from weeds at all times, until the crop is ready for use, which will be about the middle of October. The roots will continue good until spring; but those that are wanted for winter use should be taken up before cold weather sets in, and stored in sand in a cool, dry cellar. When lifting the roots, the leaf stalks should not be cut off closer to the crown than about an inch. Those wanted for spring use may be left in the ground until required; but care must be taken to dig the roots before they commence to grow. An ounce of seed will sow about fifty feet of row.

There is only one variety cultivated. The so-called Black Oyster Plant is not a Salsify at all, but a *Scorzonera*, which although its root resembles the former, belongs to another genus. Its cultivation does not differ from that of Salsify except that, as it has a tendency to run to seed, it should be sown later.—CHAS. E. PARNELL, in *American Garden*.

THE BEN DAVIS APPLE.—The Indiana Farmer says the Ben Davis apple is so poorly flavored that even the codlin moth generally passes it by for some better variety, and the consequence is that but few of these apples are wormy, and being of high color and handsome shape, they are a very popular apple at the city fruit stands, where they outsell other kinds about two to one on the average.

THE IMPROVED STYLOGRAPHIC PEN.

A fountain pen that always writes and never "leaks," that makes a fair, plain line, and never blackens the fingers, and that, once filled, can be used for days without change, avoiding all the bother and interruption of reaching over to the inkstand for a fresh dip every two minutes, that can be carried in the pocket, and is as handy for use and as neat as a lead pencil, and that writes on any paper however thin or soft; such a pen is worth having. And such a pen is the "Livermore Stylographic Pen." This we know from personal use.—*Editor Chicago Advance.*

The Livermore Company, which originally introduced the Stylographic Pen, have recently made great improvements in their pen, and have reduced the price so that everybody can have a chance to purchase the best article of the kind. By sending \$2 to Louis E. Dunlap, Manager Stylographic Pen Co., 290 Washington St., Boston, you will receive by return mail one of these famous pens, and also a sufficient quantity of superior ink for six months' use. Full particulars as to different styles and prices can be obtained by sending for circular.

RAISING POTATOES.

The methods of raising potatoes common here in Maine may be of interest. Sod land broken up in the fall previous, or in the spring preceding the crop is preferred. It is a little more work to handle the crop on sod land, but the crop is generally better. It is broken not more than six inches deep on an average. This is thoroughly harrowed. The manure in some instances is spread on the sod before plowing, in others it is spread after plowing, and harrowed in. Some apply the manure in the hill or drill. The seed dropped

on this, and the whole covered three inches deep, with hand-hoes or horse-hoes. Some apply no barnyard manure, but use plaster (gypsum) and ashes, superphosphate, guano, or other concentrated manure in the hill. The seed is cut; a medium-sized potato being made from two to four pieces, and one piece dropped from one foot apart with some to two feet by others, in the row. The average distance apart of the rows is about three feet and a half. The crop is cultivated out when the potatoes are from four to six inches high, and this is followed by a hand or horsehoe, or both; and they are hilled medium height, but one hoeing being given. The weeds that have escaped first hoeing or grown since, are pulled or cut up in July and August before crop ripens.

The crop is for the most part harvested by hand. No potato digger has at present been brought out of sufficient merit and practical utility as to warrant general or hardly partial introduction. They are harvested any time after the tops die and before the ground freezes. They are generally harvested earlier now than in the past. A dry, cool, frost-proof cellar that is dark, furnishes the best storage.—*Farm and Garden.*

POUGHKEEPSIE RED AND ULSTER PROLIFIC GRAPES.

The Poughkeepsie Red is a cross of Iona and Delaware; the vine is a strong grower; the leaf resembles that of Delaware more than any other. It has been proved perfectly hardy in the latitude of Toronto for the past 10 years. The clusters run in size from that of Delaware to twice as large, many of them having from three to four shoulders. Clusters have been grown that weighed a pound each. The crops are heavy. There have been but two seasons in the past 15 years when it has ripened as late as September 10th; it usually

ripens in August. It contains sugar enough to raisin if suspended in a paper bag and hung in a warm room. No foxy or offensive aroma, disagreeable or unpleasant taste of any kind, can be found in skin or flesh. Its saccharine matter has stood in different seasons at from 102 to 106 degrees, and the acid at from four to five degrees. The oldest wine-maker in the State ranks it "highest of all" for wine. Although not used before in the description of native grapes, we apply to it the term "Perfect."

THE ULSTER PROLIFIC

is a cross of Catawba and an edible variety of the wild *Æstivalis*, and minute thorns cover the wood, as in case of the latter. The growth of vine compares with that of the Catawba. During the eight years we have fruited it, it has proved as hardy as any of the wild varieties. Leaf of medium size and wild in appearance; it hangs on to the last and we have never known it to mildew. While the quality of the fruit is in one particular not as pure as that of Poughkeepsie Red, yet it is passed upon at the many fairs at which it has been exhibited and by all who have visited our grounds as the best seedling we have ever produced, owing to its peculiar luscious saccharine property. We know of no variety that will ripen so great a quantity of fruit to a given amount of wood. The joints are from one to three inches long. The clusters are of Catawba size; the berry is longer; compact, but not crowded. It ripens with the Concord, and will hang until the ground freezes. The old wine-maker spoken of above says it makes a wine of high character. Its unfermented juice is unusually sweet.

On correctness of these descriptions of these two seedlings we await the verdict of the country, and ask any of the numerous persons who have visited

them and know them to correct any error in the descriptions.—*Rural New Yorker*.

GRAPE GROWING IN THE UNITED STATES.

The following notice of the number of acres under cultivation to Grapes, and the quantity of wine manufactured therefrom, will give our readers some idea of the rapid growth which this industry has already made. The *Florida Dispatch* says:—

From statistics recently published by the Department of Agriculture at Washington, we learn that there are now 185,583 acres of grapes grown in the United States. Wine from the product of these vines, is made to the amount of 24,453,857 gallons, having a market value of \$13,436,174 87. California, of course, leads, having one-sixth of the area, yielding nearly two-thirds of the wine. New York comes next, having 12,643 acres, though but little is made into wine; the grapes find ready sale in the market; only 584,148 gallons are made. Rhode Island only returns 55 acres; while Illinois, from 3,810 acres, makes over a million gallons of wine. Missouri, Ohio, Georgia and New Mexico are leading wine-making sections. Colorado cuts no figure at all in the report, but the day is coming when grape culture will be one of their prominent industries.

BOOK NOTICES.

GEO. W. CAMPBELL'S PRICE-LIST of Hardy Grape Vines, Fruit Trees, Small Fruits, &c., Delaware, Ohio, 1883. Mr. Campbell has become an authority on grapes and grape culture in Ohio, and his opinions thereon are entitled to careful consideration.

THE NATIONAL FARMER is published weekly at Washington, D. C., U. S. A.; price \$2 per year. In addition to information upon agricultural topics, some space is given to cognate topics of general interest.

THE SEAT ON THE HILL TOP, BENEATH THE OLD TREE.

What man hath not found on this changeable earth,
Some shelter'd retreat to emotion give birth;
Where memory, pointing to things that once were,
Imprints on our faces a smile and a tear?
To pride give her follies, to pomp her display,
To beauty her charms, give wealth what you may;
Give to each of them all, but spare, spare for me,
The seat on the hill top, beneath the old tree.

How can I but love thee, thou sacred spot!
And think of the loved ones, who were, but are not;
When I view thy old trunk, draped o'er with the vine,
The Woodbine and Pipevine, thy branches entwine.
And could but those dear ones who planted them
there,

Sit again by my side, these blessings to share,
Thy'st naught in this wide world I'd barter for thee,
My seat on the hill top, beneath the old tree.

Since thou wert a sapling, thou noble old tree,
Thy youthful companions have long ceased to be;
And oft have I wished thou would'st whisper and tell
What shrubs and sweet flowers did then with thee
dwell.

Did Hepatica's buds invite thee to spring?
And little blue Harebell, the old year's knell ring?
Or child of the forest, all brimful of glee,
Flee away to hill top, beneath the old tree?

Did brave Indian warrior find rest in thy shade?
Or thy branches e'er shelter forlorn Indian maid?
And some betrayed mother, with babe at her breast,
For surely 'twas here that the weary might rest.
For the woes of mankind do we watch and weep;
And then, in our weariness, slumber and sleep;
The spot on this green earth best suited must be
The seat on the hill top, beneath the old tree.

CHARLES ARNOLD.

A correspondent wants to know why an ear of corn seldom if ever has an odd number of rows, and where do the red and speckled grains come from when nothing but white is planted. Perhaps some of the intelligent readers of the *Rural Record* can tell, through our columns.

THE PUGET SOUND FIR.—One of the wonders of the American forests is the fir tree of Puget Sound. The trees average 200 feet high, and some specimens have been cut that measured 320 feet in length and twelve feet in diameter at the base, with a straight and well proportioned log length of ninety feet to the first limb.

THE CONKLING PEACH.—From a yearling tree of this variety, obtained of Ellwanger and Barry, in the spring of 1880, we picked a number of ripe peaches of uncommon excellence. It is a beautiful yellow peach, smaller than the Early Crawford, of a fine, juicy, rich, exquisite flavor, and very desirable in a

family collection. It may prove a desirable market variety for aught we know, as the first product of a three-year-old tree is no test of productiveness.

TO PUBLISHERS AND EDITORS.—Many Newspapers and Magazines have been established in the United States and Canada within the last two years, the names of which do not appear in any Newspaper Directory or Catalogue. The publishers and editors of such are invited to send copies and a full description of their respective publications to the *Editor of Hubbard's Newspaper and Bank Directory of the World*, New Haven, Conn., U. S. A., that they may be properly catalogued and described in the forthcoming edition of that work for 1883. Editors who kindly give this notice an insertion in their columns will confer a favor upon the Press of America.

LARGE CELERY.—Probably the largest root of celery ever taken to Boston market, measuring 38 inches in length, 24 inches round, and weighing 7 pounds, was raised on the market farm of G. D. Moore, of Arlington, who is one of the largest growers of early produce for Boston market. He has this season about six acres of celery, nearly all of this mammoth variety. He began to market it Sept. 14th, receiving \$8 a box of 2½ dozen. This variety is said to be the best flavored and most tender of any known, and brings the highest price.

WOOD ASHES FOR PEARS.—The pear seems to be especially fond of wood ashes, and we ascribe much of our success in past years with pears to a liberal and annual use of it in our pear orchards. All that we could make or buy was thus used, by scattering around the trees, the cultivator working it into the soil. Only the fresh, unleached ashes were used, and not only did our trees produce heavy crops and fine fruit, and present in their foliage that dark green coloring of leaf which indicates vigor and healthfulness, but the hoed and cultivated crops which were raised between the trees each year did not fail to appreciate the food they gathered in from that not appropriated by the fruit trees.—*Farm and Garden.*



Oak-Leaved Mountain Ash.

A handsome and hardy variety, with large and deeply lobed leaves, distinct and fine. Covered in autumn with bright scarlet berries.

"PRINTED FOR THE CANADIAN HORTICULTURIST."

THE

Canadian Horticulturist.

VOL. VI.]

MAY, 1883.

[No. 5.

ORNAMENTAL TREES.

When the term ornamental trees is used, it is intended thereby to designate trees that have been planted, not for the sake of their fruit, but for the sake of shade and adornment. Every man of taste and refinement wishes to make his home surroundings neat and attractive, as well as to have that home bountifully supplied with all the comforts and luxuries which the soil and climate can be made to produce. For the latter purpose he plants a fruit garden, and sets in it those trees and vines that will yield the finest fruits; but when his object is to shelter the house from the heat of the mid-summer sun or the chill blasts of mid-winter winds, or make an attractive picture to delight the eye and gratify the sense of the beautiful, he plants the trees and shrubs that will best secure these ends, irrespective of any consideration of what fruit they will yield to the table.

Every one who takes an honest pride in having a pretty home, or in living in a pretty country, rejoices in seeing our rural residences nicely ornamented with groups of pretty trees and flowering shrubs, and the country road sides planted with trees, whose grateful shade

is so refreshing, and whose sylvan beauty adds so much to the value of every homestead. And it is a most favorable sign when the legislature of a country so appreciates the value of road side planting as to grant a pecuniary reward to the people who will thus plant and care for ornamental trees. .

Fortunately we have not far to seek for trees that are suitable for street planting, home adornment, and winter protection. Our native forests abound with them, and if these are not enough, our nurserymen have collected the most hardy and beautiful of other climes, which, when judiciously mingled with our native trees, give a most pleasing effect to the rural picture. And yet with all this wealth of comfort and beauty at command, with the certain fact also before us that this sort of planting is more than doubly repaid in the enhanced value of our lands, and ten-fold repaid in shelter from the noon-day heat of summer and the frosty blasts of winter, notwithstanding all this, the fact remains that ornamental tree-planting is sadly neglected in this country, as a whole. However we are improving in this respect, and the enquiry for shade trees of beautiful

forms and foliage, is in fact rapidly increasing.

Somehow, in what of planting we have done, we have not given in this country the same prominence to the Oak as is given in England. The oak is slow, comparatively, of growth, and somewhat difficult to transplant, but it is a majestic tree, and where ample room can be given for its development makes a most beautiful feature in the landscape. With us the maple and the elm are the favorite trees. In the New England States the elm has been very generally planted as a village street tree. The author of "Norwood" says of our graceful American elm, "No town can fail of beauty, though its walks were gutters and its houses hovels, if venerable trees make magnificent colonnades along its streets. Of all trees, no other unites in the same degree majesty and beauty, grace and grandeur, as the American elm. Their towering trunks, whose massiveness well symbolizes Puritan inflexibility, their over-arching tops, facile, wind-borne and elastic, hint the endless plasticity and adaptableness of the people, and both united form a type of all true manhood, broad at the root, firm in the trunk, and yielding at the top, yet returning again after every impulse into position and symmetry. What if they were taken away from village and farm house? Who would know the land? Farm houses that now stay the tourist and the artist, would stand forth bare and homely; and villages that coquette with beauty through green leaves, would shine white

and ghastly as sepulchres. Let any one imagine Conway or Lancaster without elms! or Hadley, Hatfield, Northampton or Springfield! New Haven without elms would be like Jupiter without a beard, or a lion shaved of his mane."

The maples well deserve their popularity because of their beautiful symmetry, their abundant foliage, and great depth of shade. They are among the first to expand into full leaf in spring, and when autumn comes they glow with such rich colors and varied tints as only our sunset clouds can rival. The maples too are healthy trees, not very subject to insects, though by no means entirely exempt, and from their neat style of growth and moderate size, well suited to the dimensions of by far the greater number of our Canadian towns.



SUGAR MAPLE.

The two varieties of maple that have been most generally planted with us are

the Sugar Maple, *Acer Saccharinum*, and the Silver Maple, *Acer Dasycarpum*.

The difference in the style of growth of these two varieties will be seen at a glance by comparing the accompanying illustrations. The Sugar Maple forms a somewhat oval head, quite dense and compact, yet graceful in outline, and thickly covered with foliage. The lights and shadows are broken into many small masses, strongly defined,



SILVER MAPLE.

and yet melting softly into each other. But the lights so far exceed the shadows that the whole has a bright and cheerful expression. While lacking the grandeur, the broad bold shadows of the oak, and the chestnut and the hickory, it is on that very account more in harmony with cultivated grounds and our smaller suburban home-lots.

The Silver Maple, on account of its much more rapid growth, has been the more popular variety for street planting. It forms a loose, spreading head, with long, swaying branches, and slender leaf stems, so that when the wind blows, the ruffled leaves display a pleasing contrast of green and white, as the under surfaces are brought to view. It is not until the tree has attained to considerable age that it breaks into masses of light and shade, and at no time is its autumnal foliage so richly diversified with brilliant colors as that of the Sugar Maple. The length of its far out-spreading branches renders this tree more liable to be broken by high winds, or a heavy fall of snow or winter ice storms, yet this can be largely remedied by judicious shortening in of the growing branches, thus rendering the head more compact, and lessening the leverage of incumbent snow.

But there is neither time nor space to even mention the many trees we have that are suitable for home embellishment. The object of this article is to call attention to a tree that has not been much planted in Canada, but which possesses many excellencies which make it worthy of the attention of those who are selecting ornamental trees for small grounds. The colored illustration that accompanies this number will give our readers a very good idea of its general appearance. It is called the OAK-LEAVED MOUNTAIN ASH. It belongs to the great family of Rosaceae, and to the genus *Pyrus*. By some botanists it is designated as the *Pyrus pinnatifida*. Although commonly call-

ed Oak-leaved Mountain Ash, it seems to the writer more nearly allied to the White Beam Tree, *Pyrus aria*, than to the Mountain Ash, *Pyrus aucuparia*. Its leaves are simple, not pinnate as the Mountain Ash, but with such deep indentations and irregular outline that it has received the name of oak-leaved, to which the term mountain ash has been added, doubtless because of its clusters of berries, which become bright red in the autumn, like those of the Mountain Ash. The leaves are bright green on the upper side, but covered with a white down beneath. Its mass of foliage is much more solid than that of the common Mountain Ash, and the play of light and shadow is more like that of the Sugar Maple. It is a perfectly hardy tree in our climate, and as it grows only to the height of from twenty to thirty feet, with proportionate breadth, it makes a very suitable ornamental tree for small lawns. Having regard to the neat, compact form of the tree, the contrasts of light and shade on its surface, the corymbs of white blossoms in early summer, and clusters of red berries in autumn, we think we do not err in regarding it as one of the finest of our lawn trees.

MANURING FOR CORN.

The experiments made by the Director of the New York Experimental Station seem to indicate that manuring in the hill is of little benefit toward increasing the growth of the plant in its early stages, and that the same manure spread around the hill, instead of being placed in it, would probably have a larger influence on the growth. The

roots of the corn plant extend widely, so that if a plant be dug up at any time during its later growth, the greater part of the feeding roots will be found away from the hill extending often to a distance of twelve feet. The inference is that broad cast fertilizing is better for corn than fertilizing in the hill.

IN MEMORIAM.

The members of the Fruit Growers' Association will learn with deep regret that a leader in pomology has fallen, one who was a Director of the Association at its organization in 1868, and has ever since been an active promoter of its interests. Those who have been privileged to attend the meetings will remember the venerable form and enthusiastic manner of Mr. Charles Arnold, of Paris, Ontario, and with what respectful considerations his experiences and opinions were always received. His remarks were founded upon his personal acquaintance with the subject in hand, and set forth for the guidance of others what had befallen him in his own cultivations, hence they had a value that could never attach to any mere conjectures or cunningly devised theories. But it is not to be our privilege to listen to him again. On the morning of the fifteenth of April, 1883, Mr. Charles Arnold passed away from earth. He was born at Ridgemoor, Bedfordshire, Eng., December 18th, 1818, came with his parents to this country in 1833, and settled in Paris.

In early life Mr. Arnold enjoyed very few educational advantages; but even in boyhood he showed a taste for solid reading, and found time during his active and busy life to make himself thoroughly acquainted with several of the great masterpieces of English literature, and, although he never studied

a grammar, he wrote clear, vigorous prose, and occasionally penned short poems, chiefly on horticultural topics. Throughout his life he displayed a fine literary taste, his favorite authors being Johnson, Goldsmith, Pope, Cowper, Longfellow and Tennyson. With the modesty and patient investigation of Charles Darwin he was particularly charmed. The writings of Lyell, especially the last edition of the "*Elements*," were also a source of great pleasure to him. "*The Origin of Species*" appeared about the time Mr. Arnold had completed his first set of experiments in the hybridising of grapes, and the confirmation there given to some of his own private discoveries regarding the action of pollen and the fertilization of flowers, gave a new impulse to his efforts. In his youth he served his apprenticeship to the trade of a carpenter, and for some years of his early manhood followed the business of builder. But from a very early period of his life he showed a passionate fondness for flowers and fruits, and, coming into possession of a suitable piece of land in 1845, he determined to follow the bent of his inclination, which had been fostered and educated by the study of English books, American periodicals, &c. The Paris Nurseries were fully established by 1852, and have long been well known all over this continent, and to some extent in France, where Mr. Arnold's new varieties of grapes attracted considerable attention. His success as a nurseryman is a fine example of the happy results which follow when a man of great enthusiasm tempered with good judgment finds himself free to pursue the kind of work he loves best.

In 1872 he gained the gold medal at the Hamilton, Ont., Exposition for a new and hardy white wheat; in 1876 he obtained the Philadelphia Centennial Medal for a very superior show of

fruits, &c; and from the seed of a new cross-bred pea, "The American Wonder," which he sold to Bliss & Sons, of New York, he lately realized a handsome sum. He originated several varieties of grapes which are now grown all over the continent, and was latterly engaged in hybridising wheat, strawberries, raspberries and peas. He was fifteen years in the town council of Paris, and was deputy reeve for some time.

For a year past he has been gradually failing in health, and after a few days of intense suffering from a disease of the heart, he ended his long and useful life.

CURRENT WORMS.

A correspondent of the *Fruit Recorder* says that common tobacco-stems placed on the ground round currant-bushes in the spring, before frost is out, will keep off the currant-worm, and keep the bushes clean. The tobacco is distasteful to the worms, and they will not crawl over it to ascend the bushes.—*Montreal Witness*.

—

We reprint the above to call attention to the arrant nonsense that sometimes goes the rounds of our newspapers, and even of agricultural papers. If tobacco stems placed on the ground under currant bushes in the spring will keep off the currant-worm, it is not because "*they will not crawl over them to ascend the bushes.*" Surely they will not crawl before they are hatched from the egg; and if the parent fly lays her eggs on the under side of the leaves, the little worms will have no occasion to crawl over tobacco stems in order to ascend the bushes. We wonder if "a correspondent of the *Fruit Recorder*" ever penned such trash, or if penned, that it escaped the sharp eyes of the intelligent Editor. Or is the crawling business the surmise of some astute scissors-man, who must needs give a

reason to account for a fact, only to make his sublime ignorance manifest?

The most troublesome of the currant-worm is known as the GOOSEBERRY SAW-FLY, *Nematus Ventricosus*, an imported insect, which in the larva state is exceedingly destructive to both the gooseberry and currant.



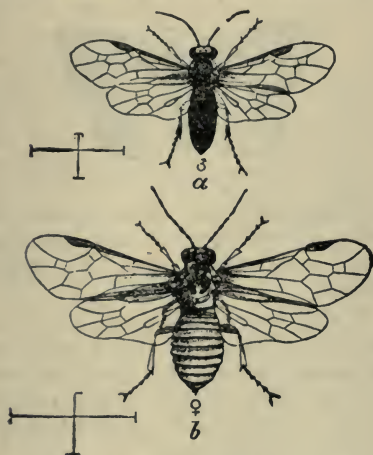
LARVAE OF THE GOOSEBERRY SAW-FLY.

The figures marked *a* in the accompanying illustration will be sufficiently familiar to those of our readers who have suffered from the depredations of these little pests; and if any have been so fortunate as to have escaped a visit from them, they will now have an opportunity of making their acquaintance. It is during this, the larva stage of their existence, that they are so injurious to our currants and gooseberries, being not only voracious, but usually numerous, so that they strip a plant of its leaves in a very short time. When two-thirds grown they are of a green color, thickly sprinkled with black dots. These dots are shown considerably magnified at *b*. When fully grown they are about three-quarters of an inch long, and at the last moult they lose their black spots and assume a plain green dress,

tinged with yellow at the extremities. They now seek out a convenient place in which to pass the chrysalis state; sometimes they choose a place among the dry leaves on the surface of the ground, where they spin a cocoon over themselves, oval in form, of a paper like texture and brownish colour; and sometimes they fasten their cocoons to the stem of the bush. Sometimes they go into the ground and spin their cocoon there, and the later broods pass the winter in the pupa state on or under the surface of the ground. The Prest. of the Entomological Society of Ontario, who is excellent authority on these subjects, states at page 33 of the Entomological Report for 1875, that this insect passes the winter in the ground in the chrysalis state; and again in the Report for 1871, he says it usually passes the winter in the chrysalis state, enclosed in a small papery looking, silken cocoon, sometimes at, and sometimes under the surface of the ground. Occasionally they pass the winter in the caterpillar state. The pupa or chrysalis is about a quarter of an inch long, of a very pale and delicate whitish green color, becoming yellowish green at each extremity, remarkably transparent and delicate.

From these pupæ the perfect insects are hatched, which are shown in the accompanying cut, the figure *a* represents the male, and figure *b* the female, both magnified; the cross lines indicating the length and wing-expansion of each. These appear very early in spring, usually sometimes before the leaves of the gooseberry and currant are expanded. The upper surface of the body of the male is black, with a yellow spot at the base and in front of the fore wings, the underside and tip of the abdomen are yellowish, and the legs are yellow. The female is larger than the male and mostly yellow. After the leaves of the gooseberry have

expanded the female fly begins to lay her eggs on the under side of the leaf, in a row on the ribs or veins of the



PERFECT INSECT OF THE GOOSEBERRY SAW-FLY.

leaves. The eggs may be seen at figure 1 in the accompanying cut, arranged in



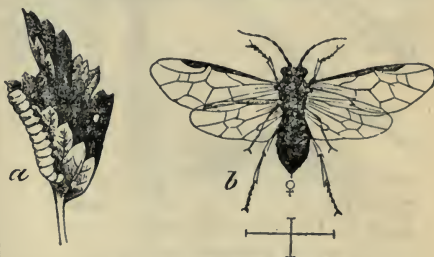
LEAF, WITH THE EGGS.

a row along the central leaf-vein and its branches. In from eight to twelve days the caterpillars are hatched, and set to work at once to eat small holes in the leaf, which are shown at figures 2 and 3. They feed in company, with from twenty to forty on a leaf, and therefore soon completely consume all

the soft parts of the leaf, so that only the veins are left remaining. Increasing in size they part company and spread over the plant, eating as they go.

Thus we have given briefly the life history of this insect, from which it will be seen that the caterpillars do not crawl up the stem of the plant but commence their existence on the under side of the leaves.

We have a native Saw-fly that feeds on the gooseberry, but which has not been such a pest as the imported. Figure *b* in the accompanying illustration represents the female fly magnified,



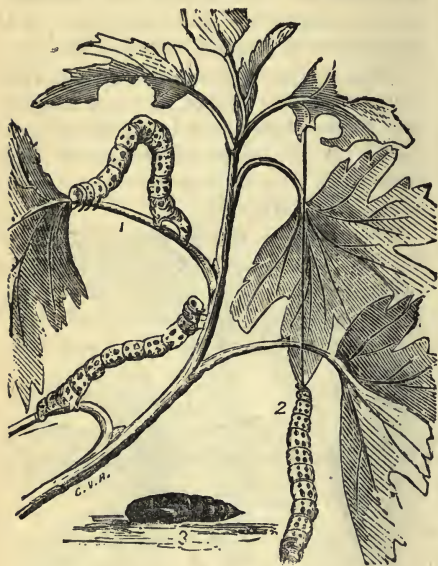
NATIVE GOOSEBERRY SAW-FLY.

the cross lines shewing the length of the body and the expansion of the wings. Figure *a* represents the larva. It is known by entomologists as the *Pristiphora grossulariae*. The larva of this insect is always green, never having the black dots of its imported cousin, and always constructs its cocoon above ground among the leaves and twigs of the bush on which it feeds. This insect is said to be common and sometimes troublesome in New York and Illinois.

There is yet another insect that is often called the Currant Worm, known to entomologists as the *Abraxis ribearia*. It is a span or measuring worm, and is designated in the Reports of the Entomological Society of Ontario as the CURRANT GEOMETER or MEASURING WORM.

The accompanying cut shews the worms in various positions. Figure 1

1 represents their mode of progression, and figure 2 their mode of suspending



THE CURRANT GEOMETER.

themselves by a thread when alarmed. When full grown the worm is about an inch long, whitish above, dotted with black dots on each segment, and a wide yellow stripe along the back and a similar stripe along each side. The under side is white, spotted with black and broadly striped with yellow along the middle.

About the end of June the larvæ attain their full size, descend to the ground, burrow a little way into it, and change to the chrysalis state. The chrysalis is shewn at figure 3 in the cut. From this chrysalis a moth hatches out in about twenty days, which is shewn in the annexed illustration.

The moth is of a pale yellowish color, with dusky spots of varying size and form. Shortly after the moths appear the female lays her eggs on the twigs and branches of the currant and goose-

berry, where they remain uninjured by the heat of summer or frost of winter,



MOTH OF THE CURRANT GEOMETER.

until the following spring, when the young worms hatch out and commence their depredations upon the tender foliage.

If then by currant-worm it was intended to designate *this* insect, the paragraph above quoted is still erroneous, for neither does this worm crawl up the bushes from the ground to begin its work of destruction.

NEW VEGETABLES.

At a recent meeting of the Massachusetts Horticultural Society, Mr. Benj. P. Ware said he should speak only of varieties which, though new, have established a reputation. Of squashes he named the Butman as a beautiful variety, with fine colored flesh, and of excellent quality, also a good keeper, very desirable for amateurs but not sufficiently productive for a farm crop. The Marblehead, he said, generally commands a higher price than the Hubbard, but does not crop so well. The Essex hybrid is a cross between the Turban and Hubbard, uniting the form and fine quality of the Turban with the hard shell and keeping qualities of the Hubbard. It is a rapid grower and may be planted as late as the 1st of July, thus avoiding the maggot.

Of cabbages, Mr. Ware thought the Stone-Mason the best variety ever introduced, making solid heads of excellent quality; and said that the

American Improved Savoy has a small stump and large head, while preserving the fine quality of the old variety, which had large stumps, and was very uncertain in heading.

Of sweet corn, he said that the Marblehead is earlier than any other, even the Minnesota and Narragansett. Next after comes the Crosby's Early, then the Moore's Early, and for a late variety either the Marblehead Mammoth, Burr's Improved or Stowell's Evergreen.

As to potatoes he said Early Ohio is earlier than Early Rose and has the requisites of a first-class variety, but that the Bell is probably the best new variety, several who had tested it in competition with twenty other sorts, claiming for it better qualities than are possessed by any other; it is very productive, remarkable for its uniform size, and of a pinkish color.

Mr. Ware thought the Acme and Paragon ahead of any other tomatoes for the table.

Among peas he considered the American Wonder to be rightly named, for the vines are very small, more peas than vines, the peas wrinkled, sweet, a great acquisition. For earliest he recommended Dan O'Rourke, then American Wonder, McLean's Advancer, and for latest, the Champion of England.

Mr. Ware recommended White Egg Turnip as most reliable for a crop, and better than Purple Strap Leaf, though not quite as early. It is a flat variety.

AMERICAN POMOLOGICAL SOCIETY.

This society is to hold its next biennial session in Philadelphia, Penn., commencing on Wednesday, September, 12th, 1883, and continuing for three days. All kindred associations in the United States and Canada are invited

to send delegations as large as they deem expedient. Arrangements have been made with hotels for reduced rates. The Hon. J. E. Mitchell, 310 York Avenue, Philadelphia, is chairman of the local committee of reception. There will be an exhibition of fruits; and a limited number of Wilder medals will be awarded to objects of *special* merit. The Pennsylvania Horticultural Society will hold its annual exhibition at the same time in Horticultural Hall. We trust that Ontario will be fully represented on this occasion, not only by her horticulturists and fruit growers, but also by a fine display of her excellent fruits.

CORRESPONDENCE.

EARLY RIPENING GRAPES.

Seeing an inquiry in the March number of the *Horticulturist* on this subject, I will reply by giving our experience in the Province of Quebec, where from necessity we have to look for the earliest varieties for general culture, though some localities are highly favored, such as the Island of Montreal, the Valley of the Richelieu, some places on the Ottawa, and here in proximity to Lake Champlain and the Richelieu River. The variety in blacks most cultivated is the Champion, which has been re-named by some adventurers the "Beaconsfield." At the time of ripening we can put up with its inferior qualities, welcome its advent, and despise its poor qualities as better varieties ripen. Moore's Early, next in order of ripening, is some better, but thus far in this Province has not been found profitable, being a light bearer. Telegraph is better on some soils, and more productive. Early Victor gives great promise, and comes to us with very good endorsements; and its behaviour here is looked forward to with

great interest, as supplying a very early black grape of excellent quality, and adapted for wine as well as table, which qualities the early Labrusca type of grapes thus far do not possess. Aruncia, Rogers' No. 39, and Barry, No. 43, a little later, possess great vigor and good qualities and size. Mr. Ricketts' Backus, wine and table grape, is early, very vigorous, and an enormous bearer. Norwood, from Massachusetts, U. S., promises to give us a grape that will excel all others in keeping qualities, and is earlier than Concord, and its originator, of course, claims that it is better; not yet for sale.

Of white grapes Lady is the first to ripen, a slow grower, taking some years to bring it to its best; a shy bearer thus far; in size and other respects good; very fair in quality for an early grape; has a tendency to crack, which is of little moment for home use, except when bees are plenty; last year it showed no tendency to crack, probably from the cold season. Prentiss is our next earliest; a fine native seedling of much promise; quality very good. Mr. Dempsey's No. 60, a cross with Allen's Hybrid, fruited last year, and gave me much pleasure; if it does better, as grapes usually do, in subsequent years, we want no better early grape. All of Mr. Dempsey's grapes have strong, healthy foliage—a point of great moment in these days of mildew and the thrip. Faith, an Elvira seedling, of Mr. Rommel's, gives much promise; it is here a rampant grower; ripens its wood well; berry and bunch small; is of fine, sweet flavor. Duchess is late here; a vigorous grower, but does not ripen its wood well; we have not fruited it, but its quality, as raised south, is excellent. I have many other white varieties, but not sufficiently tested to speak favorably of.

Of reds, Northern Muscadine is

the first to ripen; healthy and vigorous grower; drops no more than Hartford, and eatable before fully ripe; thought highly of in its season. None of the early varieties possess the high qualities of Delaware, Burnet, Wilder and Lindley, later varieties. Wyoming Red, though small in bunch and berry, is about the first to ripen. Massasoit, Rogers' No. 3, follows in ripening, is much better in flavor and a good bearer. Vergennes, for a new grape, has at once taken a high position in public favor, maturing and ripening its wood quick; fruit red and delicious; is valuable alone for its extraordinary keeping qualities. Salem, an old favorite, is eclipsed by the former in keeping qualities; like most of Rogers' Hybrids, it is a rampant grower, requiring ample space to succeed well, and prevent mildew, to which it is subject in some seasons. Brighton, though I am getting down into the later varieties, I must mention, possesses the fine qualities of one of its parents, Diana Hamburg, without its defects; it is growing in favor, though a shy bearer; like Champion, it requires to be eaten as soon as ripe.

Your inquirer, with the help of an ardent enthusiast, I trust, can select from the above enough to make him happy in the season. I see that I have omitted Worden, a great favorite and early black grape; and he will by all means try the Jessica.

WM. MEAD PATTISON.

Clarenceville, Quebec.

CODLIN MOTH.

I am still greatly delighted with the varied contents of the *Canadian Horticulturist*, and long for the monthly supply of general horticultural information which it never fails to impart.

Have you been informed of any experiments made during the past year

which have been successful in checking or destroying that detested Codlin Moth, which works such havoc in the orchards of Ontario? In the *Canadian Horticulturist* of March or April of last year, tar water sprinkled on the fruit blossoms was recommended by some one. Printer's ink smeared on paper or cloth, tied round the trunks of the trees by another. Are you aware of any experiments made with these materials, successful or not. The announcement of such in the May number of *C. H.* will, I am sure, confer a favour on the fruit-growing public.

Yours truly,

G. W. STRAUCHON.

Woodstock, April 11, 1883.

[If any of our readers have tried these or any other methods of destroying the Codlin Moth, will they please give their experience through the *Can. Horticulturist*.—ED.]

GRAPE-GROWING IN COUNTY OF HURON.

Could you mention sometime in the *Can. Horticulturist* whether grape growing could be made successful in this county (Huron), and if so, what varieties of grapes would you advise growing?

D. C. C.

Ans.—Mr. A. McD. Allan, of Goderich, says that all the usually cultivated out-door varieties do succeed in the County of Huron, except the very late ripening sorts, such as the Catawba. We can see no reason why a large number of varieties should not be very successfully grown, particularly the early ripening sorts. It is of the first importance that the soil be suitable, thoroughly drained and friable. Grape vines will not thrive in cold, wet soil. Of the early ripening sorts we feel confident that Early Victor, Moore's

Early and Worden among the black grapes, Massasoit, Brighton and Ver-gennes of the red grapes, and Lady, Martha and Jessica among the white sorts will be found to do well.

OLEANDERS FADING.

I have two fine oleanders that I put out into my garden the latter part of May. They blossom freely, but the blossoms always fade and fall off after two or three days. Can you tell me the reason, and the remedy?

When should pear scions be cut off for budding? May they be taken off immediately before budding? R.

Toronto, April 9th, 1883.

It may be want of sufficient moisture at the root, or exposure to burning rays of the sun that makes the oleander flowers fade. Dark colored roses fade quickly under our burning sun. Cut pears scions just before budding. See p. 77.

THE DAHLIA.

The dahlia is one of the choicest of the tuberous rooted perennials, which have been greatly improved on the last few years, and now consist of every shade of red, white, yellow, as well as an endless variety of mixtures of these colors. To have success with the dahlia, in the first place the soil must be well drained, which must be neither light nor of a strong sticky nature. Any good fresh soil will do exceedingly well. If it is naturally poor some fresh soil should be added along with some well decomposed cow manure or old hot bed mould, which should be well mixed into the soil at the time of planting. Much strong manure is as bad if not worse than too little, as it is apt to cause canker in the tubers, as well as inducing over luxuriance of growth, and in a great measure prevent the producing

of bloom. An open situation is necessary, not shaded by trees. The tall varieties suits admirably in shrubby borders. They also form most brilliant appearance when planted in masses, or in centres of large beds. About the latter end of May, as soon as all danger of frost is over, the plants may be planted out in the open border, holes are made, two feet apart, according to the height of the variety. The tubers or plants are carefully placed in, and some fine soil put in around, shaking the plant slightly so as to admit the soil freely around the tubers. As the plants advance in height, they should be tied to stakes with bass matting strings, and any superfluous shoots removed. When the buds have formed, liquid manure made of one part of cow dung, hen dung and horse dung, may be given with great advantage, once or twice a week. In taking up the tubers in the fall it is necessary that as soon as the stems are injured by frost, they should be cut down to within six inches of the ground, and the tubers taken up with a potato fork, labeled with the name of the variety, and turned stem downwards for a few days to permit the moisture to drain off, when dry they may be placed in hay, straw or dry sand, the crown being left uncovered in a cool place, which is secure from frost and from dampness. There they may remain with no other attention and care than examining them from time to time, and remove any that is rotten, as well as cutting off parts which are beginning to decay.

THOS. E. DAVIES.

Ottawa, Ont.

THE EARLY VICTOR GRAPE.

A correspondent residing at Clarenceville, Province of Quebec, writes that "Early Victor is likely to be an acquisition with us. I will have it in bearing this season."

FACTS AND GUESSES ABOUT NEW STRAWBERRIES.

BY T. C. ROBINSON, OWEN SOUND.

Some people are down on anything but facts about fruit, because so many new and highly praised varieties have proved unworthy of cultivation, and anything approaching a *guess* is sufficient to draw forth their indignation or contempt. Yet we want to have some idea of the value of new sorts, and what are we to do about it at first, unless we compare one fact with another given by those who have had a little experience, and draw inferences and conclusions? Perhaps this is not guessing: so much the better then. Now I will tell what I know and what I infer about some new sorts, and I hope other readers of the *Horticulturist* will do the same; for it is a matter of exceeding interest to me (and no doubt to others) to know as soon as possible what kinds will do best throughout the province.

Several new kinds make their appearance every year, but of the different rivals, usually two or three stand out, close together in importance, beyond the crowd. Two or three years ago the Sharpless and Crescent were the favored ones, with Marvin, Miner's Prolific, Forest Rose and a host of nonentities in the rear. Now we look eagerly to Bidwell, Manchester, and James Vick for success, with a vague impression that among the Big Bobs, Jersey Queens, Old Iron-clads, and Pipers, that figure on the lists, there may yet spring forward something as good as these, or better. Beside these we find the old historic name of "Daniel Boone" casting its shadows before, and in prospect to share the honors, Mrs. Garfield; and yet others in the realms of rumor, so that the man who loves to test new varieties can

anticipate a pleasant time in future seasons.

Does the man who grows "only one kind" rise here to explain that it is all nonsense to fuss with these new varieties, because there has never been anything better than Wilson's Albany, and never will be? "My dear sir, the Wilson is a grand old berry, and be you sure to stick to it, for it is money in the pockets of those who cultivate the improved varieties to have you peg away at the public with the Wilson and sour their teeth so they will want our sweeter berries, instead of bringing our prices down by going into the big fruit yourself. And just remember too that Wilson's Albany Seedling was "quite new" once, and was no doubt objected to then, in favor of others." The fact is there is a feeling abroad just now, that whether new or old, the *best berry* is good enough for us all, and hence the many enquiries about Bidwell, Manchester and James Vick, which are to the front at the present time. Bidwell is the oldest, and its remarkable claims, productiveness to exceed Wilson and Crescent, size to equal the average Sharpless, unusual firmness, and superior quality, will probably be decided for the average strawberry grower by this year's crop. My carelessness in allowing all my plants to form runners during '81, instead of saving a few to bear a full crop last season, is a source to me of no little vexation, for I do not like to plant it largely, or recommend it without reserve, until I have seen it in full fruiting. There is no doubt in my mind that it is good, but *how good* is what I want to know more about.

The good points that I have established on my place are its vigor and hardiness of plant, persistent and very abundant setting of young fruit, and the fine size, firmness and color of the berries. The points that I want to be assured of are its *glossiness* and *size*

towards the last; and if these are decided as I hope, I shall cheer for it as the best market berry yet tested. On my young potted plants, without mulching, the fruit got splashed so badly as to spoil its appearance, and the berries were small towards the last, hence my hesitation on these points. If I may *guess* about it I will say that on rich loamy land I think that it will prove an enormous bearer of first-class handsome market berries that will ship about as well as Wilson; but that on light poor soil, and especially without runners cut, it will run down in size towards the last. I consider the quality better than Wilson, but not as good as Seneca Queen and some others.

I suppose I would favor the Bidwell more if it were not for the smack I had of the Manchester. How those little Manchesters—after coming in a mail bag in October from near New York City, standing on an exposed sandy knoll all winter, with only the protection of a little soil around the crowns, and then choking up so badly with drifting sand in April as to need frequent handling to prevent smothering—finally stood up in early July and produced the handsomest berries on my place, is something I can't understand. I know that such behavior does not *prove* that their claims are sure to be fully established when they are full grown; but I *guess* that I know enough about Manchester to put it out as fast as I can get the plants, and I wish I had "a good square acre" to bear this year. The point I regard as doubtful with this berry is firmness. The fruit seems behind Bidwell in this respect; and it is pistillate too, which is a positive objection in the eyes of many. I liked the quality better than Bidwell, but quality, on such young plants, cannot always be taken as a fair sample. It is later than Bidwell, and different growers are likely to fancy it more or

less than Bidwell, on account of its success on sandy land, while the former flourishes on moister soils.

But now for the James Vick. Last fall I took a notion to turn a good old stable into a poor apology for a greenhouse. Out came a four foot wide strip for glass along the whole south side, and a second siding of plank comprising and compressing a warm lining of tramped pea straw around the rest of the building, with a small box stove inside, and complement of common stove pipes, furnished me, at a total cost of about \$15 with a climate that plants could live in. Much and hearty was my inward chuckling at the thought of the multitudes of Vicks, Souhegans and Hansells that should issue in spring from this sorry looking green house, in which I now write. But the worst west winds howled in derision through my pea straw, and the occasional frosts they managed to insinuate, combined with my inexperienced treatment as to watering, reduced my precious Vicks from over fifty to a bare dozen, and at this writing—April 10th—not a runner has started on them, or on the Manchester, Big Bob, Ray's Prolific and Shirts, that kept them company. How I wished that sawdust had been put in the place of the straw. But if my spring plantings must come from open ground, and if my results in this line are mostly in the way of experience, I have one bit of experience that I think will prove uncommonly useful. Of all these kinds the Vick is making the greatest promise of fruit. Those mean little plants that just managed to live through January are loaded down with blossoms, and the abundant supply of pollen is shewn by the fine and perfect shape of the berries already formed. Manchester near by is growing more and larger leaves, but is evidently later, as a blossom bud is only showing here and there. But the Vick is fairly

revelling in blossoms. "What is the fruit like?" That is just what I hope to know about the time that this number of the *Horticulturist* reaches its readers. But while I must have my little guess about the James Vick too, I must only go so far as to prophecy that its great superiority to the other kinds thus far, must indicate at least a great tendency to set fruit in open ground; the handsome shape of those already formed would seem to speak well for its appearance where circumstances are more favorable to development. I am glad that the peculiarities of foliage and fruit lead me to discredit the report of its similarity to Captain Jack, one of the meanest, sourest deceptions that ever in the guise of strawberry set my teeth on edge, and my temper over the edge. But just how the berries will taste, how the sunshine will glance on their blushing cheeks, and how a single plant will pile them around in stacks so that a bug cannot reach the centre without climbing, all such fascinating points I must leave to the decision of open ground culture, or accept on the word of the good men and true who *have been there* already. Now who next will tell what he knows, or help us to a better *guessing*?

TOBACCO FOR THE CABBAGE BEETLE.

TO THE EDITOR OF THE CANADIAN HORTICULTURIST:

I have much pleasure in adding testimony to the use of tobacco stems as indited by H. Primrose in your March number of the *Horticulturist*. I have used most successfully for years the siftings from the tobacco stems on cabbages and cauliflowers. In spring, when planted out, they are attacked by the Black Beetle, especially in bright sunny days. Having procured in a box a supply of the tobacco, I drop a small quantity on each plant. Mr. Beetle skedaddles forthwith, the plants

are invigorated by its use. I repeat the dose in a few days if there happens to be much rain-fall, which washes the nicotine too soon away. Growers, try it faithfully.

Yours truly,

GEO. VAIR.

Chestnut Park, March 19, 1883.

P. S.—Anti-tobacco men may yet laud the name of Sir Walter Raleigh for the introduction of the weed.

G. V.

HARDY BORDER PLANTS.

(Discussion on various hardy border plants at the meeting of the Massachusetts Horticultural Society, held in Boston, February, 1883.)

Edward L. Beard said that the narcissus is among the most neglected plants. They will repay all the care that can be given them. The double *Narcissus poeticus* has a tendency to blight its buds when the soil becomes exhausted, but generous feeding will cause an astonishing improvement, and the same is the case with the long-tubed species, such as the Emperor and Empress, two very fine new varieties. The same may be said of the Lily of the valley, which is so generally left to take care of itself; and indeed the mistake is made with many herbaceous plants. The double Pyrethrums are among the most desirable plants; they require division and good culture. Some herbaceous plants will live along without much care, but the finer kinds require as much as a bed of roses. The *Anemone Japonica*, especially the white variety, may be placed in the foreground of useful plants.

Hon. Marshall P. Wilder spoke of the old double candytuft as having been so neglected that ten or fifteen years ago it was introduced as a new plant. It is very desirable.

Mrs. H. L. T. Wolcott said that her narcissus buds failed so that she gave up in despair, but she took them up

and reset them, and every bud gave a flower.

Dr. Wolcott said there is one plant, the Fraxinella, which will flourish year after year without removal; he knows a plant seventy-five years old, which blooms just as well as ever. It is the typical hardy perennial.

Mr. Wilder spoke of *spiræa sinensis* (known also as *Spiræa astilbe* or *Hot-eia Japonica*) as one of the most beautiful herbaceous plants. It forces finely. Nothing is more gorgeous than the pæonies, either tree or herbaceous, but they are much neglected. If the old dark crimson pæony were introduced now as new, it would be highly esteemed.

Mrs. Wolcott thought it should be the aim of the society to encourage the cultivation of plants which are within the reach of people generally. The tree pæony is virtually out of their reach. She had tried the fraxinella over and over again without success.

Mr. Beard thought the fraxinella likes a clay soil; a plant which he set in such a soil five years ago had done well.

C. M. Hovey said that the fraxinella should be grown from seed where it is wanted; it makes strong woody roots, with no fibres, and is very difficult to transplant. The same is the case with the *Asclepias tuberosa*, which he esteems the most beautiful of all our native plants. The herbaceous pæony is everybody's flower; it is easily grown and makes an unsurpassed show in the garden. The delphinium has been much improved; some of the new kinds are apt to die off, but the old ones are very stately. The dahlia is again coming up in the single form.

Mr. Beard spoke of the Everlasting Pea, either the rose-colored or white variety, as one of the most beautiful of garden flowers, scrambling over rocks

or a low trellis. If the seed pods are removed, it will bloom continuously. Like the *fraxinella*, it forms immense roots, and must be raised from seed where it is wanted. He saw the *Gloxinia* cultivated successfully in a cold frame last summer, and forming a most beautiful sight. When grown in this way the roots can be easily wintered by storing them in a temperature of forty-five degrees. In the spring they must be started in the house.

E. H. Hitchings mentioned as desirable native climbing plants, the *Clematis Virginiana*, *Mikania scandens* and *Apios tuberosa*.

Mr. Manning said that the *Apios tuberosa* must be grown in sandy soil, as the tubes decay in rich soil, and when it thrives it is apt to become a weed. The *Iris Kämpferi* does better after dividing.

Mr. Hovey recommended the tuberous rooted begonia for planting in the open air. Some of the varieties are too delicate, but others grow freely and blossom up to frost when treated like gladioli.

Mr. Beard said that the light-colored varieties stand the sun better than the dark, and all are benefited by partial shade, and in such a situation out doors they do better than under glass. The double ones are apt to drop their flowers.

— CLOVER SEED MIDGE. —

These minute insects are the larvæ (maggots) of the cloverseed midge, known as *Cecidomyia leguminicola*, and also as *C. trifolii*. It belongs to the same class of insects as the Hessian fly, and is about half as large in all its stages as that insect. The larvæ are of an orange color, looking like any other minute maggot. It attacks the seed heads, and when ready to transform into the perfect insect, drops to the ground,

hiding under any shelter, and spins itself an oval, compressed, rather tough cocoon, to which particles of earth adhere, thus rendering it difficult to distinguish. Transformed to the perfect insect, it issues forth as a long-limbed, slender, two-winged fly of the general appearance of the Hessian fly to the unscientific observer. The eggs are deposited in the young heads of clover, and the maggot lives on the juices, and when numerous, destroys the crop. It has one or two minute species parasitic on it, but when the fly becomes abundant the only remedy is to quit raising clover for seed until the insect disappears; and to be successful, this abandonment of the crops must be general in a locality.—*Prairie Farmer*.

CHESTNUT OAK, (*QUERCUS CAST-ANEA*.)

BY JACOB W. MANNING, OF READING, MASS.

(Published Feb. 17th in the "American Traveller," of Boston, Mass.)

This prominent and distinct member of the oak family is not so widely distributed as the gray, red, scarlet, yellow, swamp, white and pin oaks; the last is found mostly from Connecticut south; all the others are common in New England forests.

The leaf of the chestnut oak resembles that of the American sweet chestnut more than any other tree; it also has more of the upright habit of the chestnut when growing in the forest than any other oak.

The texture of the wood is sufficiently tough and durable to make it most desirable for wheelwright work, ship timber and planking; it splits, as I well remember, when cutting it, into cordwood more readily than any other oak, and in this respect it also resembles the American chestnut.

The best transplanted chestnuts of this oak that we have seen are at Ben. Perley Poore's Indian Hill Farm, in

West Newbury ; they were planted and still owned by him, and are in the plantation that took the first prize of \$1,000 offered by the State for the best forest produced by tree planting.

Here the tree is nearly forty feet high, and is of tall, upright habit, but has not yet shown the deep-furrowed bark that is to be seen on older trees ; it has a peculiar glassy smoothness when young.

We have seen trees of this oak in Bedford, N. H., seventy-five feet high ; trees that make the best timber for pile driving, for the support of buildings and bridge piers. In open ground it makes a strong, robust trunk, with more upright branches than any other oak named ; the acorn is large, sweet-flavored, and is produced by quite young trees ; they sprout freely when planted fresh from the trees ; like all species of nuts, they germinate best when not allowed to dry.

It transplants as safely as any of the oak family, and as a lawn tree it is not excelled when a tree of upright habit and expanding, regular outline is desired.

HOW TO MAKE THE GARDEN PAY.

The garden pays well, even with hand labor. It would pay much better if the main burden of the cultivation were put upon the muscles of the horse. But the saving of cost in cultivation is only a small part of the benefit of the long-row arrangement. It would lead to a much more frequent and thorough cultivation of our garden crops. Most farmers neglect the garden for their field crops. The advantage of a frequent stirring of the surface soil to growing crops is greatly under-estimated. It is said that it pays to hoe cabbage every morning before breakfast during the early part of the season. We can testify to the great advantage of cultivation every week. This frequent breaking of

the crust admits of a freer circulation of the air among the roots below, and makes the most of the dews and rains that fall. The manufacture of plant food goes on more rapidly, and to a certain extent, cultivation is a substitute for manure. Another benefit of the long-row system would be the almost certain enlargement of the fruit and vegetable garden, and a better supply of these fruits for the table. This, we believe, would have an important sanitary influence in every household.—*American Agriculturist.*

FRESH FIGS.

The *Florida Dispatch* thinks the time is at hand when we shall be supplied with fresh figs that are fresh, not dried, and ventures to prophesy as follows :

As a *shipping fruit*, we predict for the Fig an immense sale in the near future. We have, already, many sorts which may be picked a short time before full maturity, and, like the strawberry, carefully packed in quart boxes and shipped in Bowen's refrigerators to any of the northern cities. If not fully mature when packed, they will ripen *in transitu*, reaching the epicurean tables of New York and Boston as fresh and inviting as when plucked here from the trees. There cannot be the slightest doubt that, if fine, sweet, ripe Figs can be thus safely transported and properly presented to the people of the North, they will speedily become immensely popular as a dessert fruit ; and that, to come anywhere near supplying the coming demand, we shall need a hundred trees where we now have one.

The possibility of safe transportation in refrigerators is no untried experiment. It was successfully accomplished by Col. D. H. Elliott, of *The Dispatch*, a year or more ago, and the Figs were sold in New York, (if our recollection is correct,) at *forty cents per quart*. We would ask no more profitable or remunerative *business* than to produce Figs by the car-load at half or even one-quarter of that price ; and we confidently advise all our fruit-growers who live within reach of transportation lines to plant Figs largely and at once.



EARLY HARVEST BLACKBERRY.

THE EARLY HARVEST BLACK-BERRY.

The following remarks concerning this new Blackberry are from the pen of Mr. Parker Earle, one of the most extensive small fruit growers of Illinois:

This new Illinois seedling, or, if you please, "wildling," is attracting a good deal of attention among backberry cultivators. Having tested it in a small way, and written some words in its favor to the introducer, I am the recipient of a multitude of inquiries concerning its merits. If you will permit me, I will say all I know about it in the *Country Gentleman*, and so possibly save the

fraternity of inquirers, and myself too, some trouble. First of all, the Early Harvest is not the same as Brunton's Seedling, another Illinois production, as has been stated in some horticultural papers. The two are much alike as to size of fruit and season of ripening, and also in appearance of the plants, but they are distinctly unlike in their blossoms, the Harvest having perfect flowers, while the Brunton is entirely pistillate, and will not bear a berry without having some good staminate variety planted with it. Both these sorts are very early, but which is first I cannot say, as my experience with the Brunton was terminated some years before the Harvest was sent out.

I think the Early Harvest will prove valuable for those growers with whom very early ripening is an important quality. It seems to be a few days earlier than the Wilson, and has some other points of advantage over that sometimes excellent kind. It cannot be ranked with it in size, as the Harvest is only small to medium, while the Wilson is among the largest. But the former is far more hardy than the latter, being equal, and possibly superior to the Lawton in this important respect. The Wilson is safest as to the rust, as it is rarely affected, while the Harvest shows some weakness in that direction. But every blossom of the Harvest makes a berry, and there is an abundance of them, while the Wilson has some radical weakness in its flowers, which sometimes in the best situation, and always in many localities, produce more abortions than perfect berries. The Harvest has not yet been marketed in any considerable quantity, and it is not safe to say how well it may please the trade. But as a berry for home use, it has unquestionable value, because of its earliness and reliable productiveness.—*Country Gentleman*.

In the *Farm and Garden* we find the following:—

Early Harvest is very distinct in growth and foliage from any other cultivated variety, and its name, aside from its pretty sound, is singularly appropriate, ripening as it does just as the earliest winter wheat is in condition to harvest. The canes are of strong, upright growth and branching and immensely productive. Berries of excellent quality; and although not large are of good size, averaging larger than Snyder. What adds much value to the variety, especially for the fruit-grower, it ripens its entire crop in a few days, and is all gone when the Wilson and other of the early kinds begin to turn black. While the Early Harvest is a good blackberry in other respects, its distinctive value, is its earliness, ripening as it does far in advance of all other varieties, which, together with its good size, large yield, and hardy, healthy canes, render it of almost inestimable value, either for the amateur or professional fruit-grower.

CABBAGES.

AT THE NEW YORK AGRICULTURAL EXPERIMENT STATION.

Twenty-eight varieties of cabbage, early and late, were tested under garden culture. The seeds—thirty of each sort—were planted in the cold-frame April 7th and 8th, and the plants transplanted to the garden April 27th, in rows three feet apart, plants two feet apart in rows, the soil made moderately rich and the plants kept cultivated throughout the season with a hoe.

One of the first troubles which we met was in the varieties not coming true to name, although the seeds were procured of one of our most reliable seedsmen. Thus, Henderson's Early Summer gave but thirteen genuine plants, Schweinfurt Quintal twenty-five, Sugar Loaf fifteen, American Savoy thirteen, etc. But little difference was perceived in the time required for vegetation, varying only from 9 to 10 days in the varieties. There was, however, quite a large difference between the germinative powers of the different varieties of seed. In no case, however, did all thirty seeds vegetate. In two cases twenty-nine seeds; in four cases twenty-eight; in two cases twenty-seven; in two cases twenty-five; in one case twenty-four; in two cases twenty-three; in six cases twenty-two, etc. The first to arrive at edible maturity was the Early Oxheart and the Nonpareil on July 26th. Vilmorin's Early Flat Dutch and Newark Early Flat Dutch came two days later, then followed, on August 1st, the Early Ulm Savoy, the Early Jersey Wakefield, and the Early Winningstad; on August 4th, Cannon-ball and little Pixie; on August 11th, Henderson's Early Summer, Crane's Early, Schweinfurt Quintal, Early Blood Red Erfurt; on August 15th, Sugar Loaf, Fottler's Improved

Early Brunswick, Large York and Danish Drumhead; on August 22, Premium Flat Dutch, Improved American Savoy, Early Bleicheld, Early York, Stone Mason, Red Drumhead, Drumhead Savoy and Red Dutch; on September 1st, St. Dennis Drumhead, and on October 17th, Bergen Drumhead.

Those plants which produced as many heads as there were plants, were Schweinfurt Quintal and Early Winningstadt. Green Glazed produced no heads, and among those which produced but few may be mentioned, the Early Ulm Savoy, seven heads from twenty-nine plants; Henderson's Early Summer, ten heads from twenty-eight plants; Sugar Loaf, nine heads from twenty-two plants; Fottler's Improved Early Brunswick, twelve heads from twenty-eight plants; Improved American Savoy, eight heads from twenty-seven plants; Early York, five heads from twenty-two plants; Drumhead Savoy seven heads from nineteen plants; Bergen Drumhead, five heads from twelve plants; St. Dennis Drumhead, six heads from twenty-three plants. Selecting the few varieties which commend themselves to us, we can name the Vilmorin's Early Flat Dutch, at edible maturity July 28th, nineteen seeds germinating, giving seventeen heads, and the trimmed heads weighing about four pounds apiece; the Newark Early Flat Dutch, at edible maturity July 28th, furnishing nineteen heads from the twenty-two seeds which vegetated, and the trimmed heads weighing about $5\frac{1}{2}$ lbs.; the Early Winningstadt, which was edible August 1st, furnished twenty-three heads from twenty-three plants which vegetated, the trimmed heads weighing about three and half lbs.; the Schweinfurt Quintal, which was ready for the table August 11th, which gave twenty-four heads from twenty-nine plants, the trimmed heads weighing about seven lbs., and very solid.

CABBAGE BUTTERFLY.

We were troubled considerably by the ravages of the cabbage butterfly, *pieris rapæ*, or rather by its larvæ. The Butterfly was seen flying about the plants early in summer, and in the latter part of June the first brood of caterpillars appeared. These did less destruction, however, than the second brood, which came about the middle of August. In order to test the efficacy of a few of the so-called remedies for the cabbage worm, we confined some of the caterpillars in a bottle and noted their behavior under various treatments. One specimen confined for three hours in a bottle partly filled with black pepper crawled away discolored by the powder, but apparently unharmed. The second repeatedly immersed in a solution of saltpetre, and a third in one of Boracic acid exhibited little indications of inconvenience. Bi-sulphide of carbon produced instant death when applied to the worm, though its fumes were not effectual. The fumes of benzine as well as the liquid, caused almost instant death, but when applied to the cabbages, small whitish excrescences appeared on the leaves. Hot water applied to the cabbage destroyed a portion of the worms, causing also the leaves to turn yellow. One ounce of saltpetre and two pounds common salt dissolved in three gallons of water, formed an application which was partly efficient. The most satisfactory remedy tested, however, consisted of a mixture of $\frac{1}{2}$ lb, each of hard soap and kerosene oil in three gallons of water. This was applied August 26th, and examination the following day showed many, if not all, of the worms destroyed.

The growing cabbage presents such a mass of leaves in which the caterpillars may be concealed that it is hardly possible to reach all the worms at one application. It is of importance, therefore, to repeat the use of any remedy at

frequent intervals.—E. LEWIS STURTEVANT, M. D., Director.

FRUITS IN ENGLAND.

The extent to which our supplies of fruit, for all purposes, are now furnished by the market is most suggestive and instructive, especially when we reflect how much of it comes from foreign sources.

At this season, the most prominent features of the fruiter's store are the apples and pears and pine apples. Writers may say what they like about the comparative excellence of English apples and pears, but so long as Newtown Pippins are in the market, and French pears, both seem to be preferred. And look at the prices good samples of the latter have been fetching in the retail fruiterers' shops! Taking it altogether, there are few or no apples which surpass the Newtown Pippin. It is an excellent keeper in the barrel, turning out in the soundest condition months after it has been stored. We have frequently unpacked in January barrels that were filled when the fruit was gathered, in which there was hardly one decayed fruit, and very few bruised ones; but in the barrel the bruised fruits do not decay as they rapidly do on exposure, so that the fruit is best kept in the barrel, stored in a dry, cool cellar or some such place. The reason the fruit does not rot when bruised is no doubt because of the air being excluded, as the apples, being firmly packed together, do not shift on the journey; and where they squeeze each other so closely the air cannot reach them. The wonder is, however, that there are so few damaged fruits in the barrels, the quantity not being worth mentioning. No doubt the excellence of these apples hinders home culture very much, for numbers, knowing they can supply their wants at this season at little cost and trouble, do not think of growing their own fruit—the market is their orchard. When a large quantity is wanted, the best way is to buy in the barrel at the seaport, and keep them in the barrels. A fruit room is not needed in this case. The best brand should also be secured. Other varieties of American apples are also sold very extensively, and at a cheaper rate than the Newtown.

In selecting good sorts for general cultivation the Americans have entirely beaten the English growers, and this, more than anything else, has tended to promote the American apple trade, the origin of which may be said to date from yesterday. It is now beginning to be realized where our mistake has been, and there is an earnest desire exhibited to imitate American cultivators in the matter of selection; but, while the latter have long since settled the main problem for themselves, we are still only groping in the dark, so to speak, as regards the best sorts to grow. The American horticultural societies have no doubt greatly promoted the apple trade, for they have been far more practical and nationally useful than similar societies in this country. Their objects have been of greater national importance, and they have done much to foster the cultivation of useful fruits and vegetables all over the States. In presence of the American societies for the promotion of horticulture, British enterprise in the same direction dwindles into the most insignificant proportions; for, although the Royal Horticultural Society is one of the oldest in existence, and has had great opportunities, it has a poor record to show. Its aims have been paltry and frivolous in most instances, and instead of leading it has been led; for it would be difficult to mention any important service to horticulture which it has conferred. The vine, pine, peach, apple, and pear, &c., have been objects of improvement and culture but in none of these has the Horticultural Society ever rendered any signal service. If, when it had the chance, it had set to work to find out what sorts of fruits were best for English gardens, and what kinds of hardy fruits succeeded best in different parts of the country, or attempted some useful task of that description among the many open to it, what might not have been accomplished by this time? There have been, and always are, important problems interesting and engaging the attention of horticulturists, which might often suggest work for a society which professes to be national in its aims; but the Royal Society has usually set about demonstrating such problems, when it did try, long after other people were satisfied of their utility.—*Gardeners' Chronicle*.

A PROFITABLE PEAR ORCHARD.

Franklin Davis, the veteran fruit grower of Richmond, Va., gives an account, in his report to the American Pomological Society, of the pear orchard of the Old Dominion Fruit-growing Company. The ground which it occupies is on the south bank of the James river, 75 miles below Richmond. The farm belonging to the company contains 500 acres, mostly sandy loam, underlaid with shell-marl from 5 to 15 feet below the surface, with a natural drainage. About 18,000 peach trees were planted from 1860 to 1867, but the fruit rotted badly, and the orchard was neglected. At the same time a few pear trees were set out. About 1871 the pear trees gave handsome fruit, which sold well in market. The owner then saw that it was the place for pears, and next year set out 1,000 Bartletts. The following spring 400 more Bartletts were added, and 600 Clapp's favorite. In 1873 the above named company was incorporated, and the farm passed into its hands, with a capital stock of \$20,000, in 200 shares of \$100 each. Nine thousand more trees were set out the following spring, and the same number a year later. The orchard now numbers over 20,000 trees, or over 19,000 Bartletts. When planted they were 1 and 2 year trees, were cut back to a foot of the ground, and were thus made quite low headed, which form was thought to be best suited to that climate. Twenty or thirty acres are annually planted with corn, as much more with peanuts, and the remainder with black peas, plowed under in autumn. This, with the marl, constitutes nearly the only fertilizing

Clapp's Favorite ripens about the first of July, and the Bartletts from the 10th to the 25th. The fruit is carefully assorted and graded, and packed in boxes holding a bushel each, made of $\frac{5}{8}$ -inch dressed lumber, and nearly

water-tight. It carries better and ripens better in tight boxes. Being gathered ten days before ripe, time is allowed for conveyance to New-York and Boston, and for the arrangements of the commission merchant and the retailer.

The company paid \$12,000 for the farm, leaving \$3,000 for planting trees, and various other expenses. The first dividend was paid in 1880. The pear crop brought \$4,000, which, with the balance in the treasury from the previous year, gave a cash dividend of 20 per cent. on the capital. In 1881, four thousand boxes of pears were sold, with net returns of \$13,684, out of which 50 per cent. was paid to the stockholders, besides 10 per cent. set aside for current expenses. Most of the trees were set out within the last eight years, and are still comparatively small.

The two valuable facts taught by this successful experiment are—1. Choosing a site which previous experience had proved well adapted to pear-growing; and 2. Planting the orchard where the fruit would ripen four to six weeks before that of the multitude of orchards at the North, but easy of access to northern cities, to which the boxes could be conveyed for less than 25 cents each. Another important point was in securing the last named advantage before other southern orchards were under way, to dispute the profits of the early market.—*Country Gentleman.*

KIEFFER'S HYBRID.—This new and unique pear was raised by Peter Kieffer, Roxbury, near Philadelphia, from seed of the Chinese Sand pear, accidentally crossed with Beurre d'Anjou or some other kind grown near it. Tree remarkably vigorous, having large, dark green, glossy leaves, and is an early and very prolific bearer. The fruit is of good size, good color, good quality, and is a promising variety for the table or mar-

ket. Fruit medium, roundish oval, narrowing at both ends, with the largest diameter near the centre. Some specimens roundish, inclining to oblong obtuse pyriform; skin deep yellow, orange yellow in the sun—a few patches and nettings of russet, and many brown russet dots; stalk short to medium, moderately stout: cavity medium; calyx open; basin medium, a little uneven; flesh whitish, a little coarse, juicy, half melting, sweet; quality very good, partaking slightly of the Chinese sand pears. Ripens all of October and a part of November. To have it in perfection, it should be gathered when fully grown, and ripened in the house.

THE DRIED FRUIT BUSINESS.

The evaporating process is working a revolution in the dried fruit industry, especially with the product of the apple. It renders the dried article so far superior in appearance and quality to that produced by the old methods, that the latter have been nearly driven from the market. Evaporated apples become a staple wherever they are known, and the scope of their market is constantly growing wider.

"An increased demand for dried fruit tends to create an increased demand for green fruit, and operates favorably to the business of fruit production. By utilizing the surplus of apples in seasons of over-production, the evaporating process helps to equalize and ensure the apple market. Large evaporators, located in extensive apple-producing regions, by appropriating a vast amount of fruit that would otherwise be forced upon the market, make room for the product of thousands of orchards.

The tendency of this revolution in apple drying is to make the production of apples a reliable business. We think that farmers who have come to the conclusion that apple growing is unprofitable need no longer fear to set

out apple trees. In average seasons the fruit will always be in demand; and in years of over production, which have heretofore been a dread, it will command a price that will well repay harvesting.—*The Husbandman.*

THE GRAPE.

Probably never before in the history of Grape-culture have so many new varieties of promise been offered in competition for preference. Considering the vigor, productiveness, quality, and beauty of many of these new candidates, I am led to predict something of a revolution in Grape-growing. It would seem inevitable that many old favorites will be supplanted. That the interest is reviving there can be no doubt, and there are several reasons for it: First, Grape-growing in this country has never received the attention it deserves. Second, the failure of many of the large vineyards of France calls attention to this country. Third, Grape-growing, intelligently pursued, without extravagant expectations, is a profitable occupation over a large tract of our country. Fourth, the successful attempt to originate improved varieties is in harmony with the advance in other branches of pomology, but somewhat in advance, as may be seen by a glance at a few of the new white Grapes. Lady Washington, Niagara, Prentiss, Duchess, and Pocklington are the leading new white Grapes, that have originated in New York; there are numerous others that have not yet attracted much attention. From Missouri we have seven new white Grapes that are exceedingly promising in that State. In summing up the record of the other States it will be seen that the supply is ample, yet the new colored Grapes are still more numerous. It is a pleasure to test these novelties in the garden, and we have no reason for apprehending danger from the avalanche of white clusters impending.—CHARLES A. GREEN.

THE OLD FARM GATE.

The old farm-gate hangs sagging down,
On rusty hinges, bent and brown,
Its latch is gone, and, here and there
It shows rude traces of repair.

The old farm-gate has seen each year,
The blossoms bloom and disappear;
The bright green leaves of spring unfold,
And turn to Autumn's red and gold.

The children have upon it clung,
And in and out with rapture swung,
When their young hearts were good and pure,
When hope was fair and faith was sure.

Beside that gate have lovers true,
Told the old story, always new;
Have made their vows, have dreamed of bliss,
And sealed each promise with a kiss.

The old farm-gate has opened wide
To welcome home the new-made bride,
When lilacs bloomed, and locusts fair,
With their sweet fragrance filled the air.

That gate with rusty weight and chain
Has closed upon the solemn train,
That bore her lifeless form away,
Upon a dreary Autumn day.

The lichens gray and mosses green,
Upon its rotting posts are seen,
Initials, carved with youthful skill,
Long years ago, are on it still.

Yet dear to me above all things,
By reason of the thoughts it brings,
Is that old gate, now sagging down,
On rusty hinges, bent and brown.

EUGENE J. HALL.

FORCING RHUBARB.—Outside of places where there are professional gardeners, the forcing of vegetables is very little known in this country. People in general are content with "things in their season," and do not trouble themselves to force or retard. Perhaps the easiest vegetable to force is rhubarb; and by taking a little trouble, material for pies and sauce may be had some weeks in advance of the supply from the open ground. The things needed are clumps of rhubarb roots, soil, and a dark warm place. The roots should be dug before the ground freezes, but in most places there is usually an "open spell" when it may be done. As fine rhubarb as we ever saw was forced in a barrel or cask; the roots packed in on a layer of soil and surrounded by it, the cask covered tight, and set near the furnace in the cellar. A box to hold the roots, and set in a cupboard or closet in the kitchen will answer; or a box or barrel may be placed in the kitchen. Keep moderately warm, and see that the roots are sufficiently moist. A

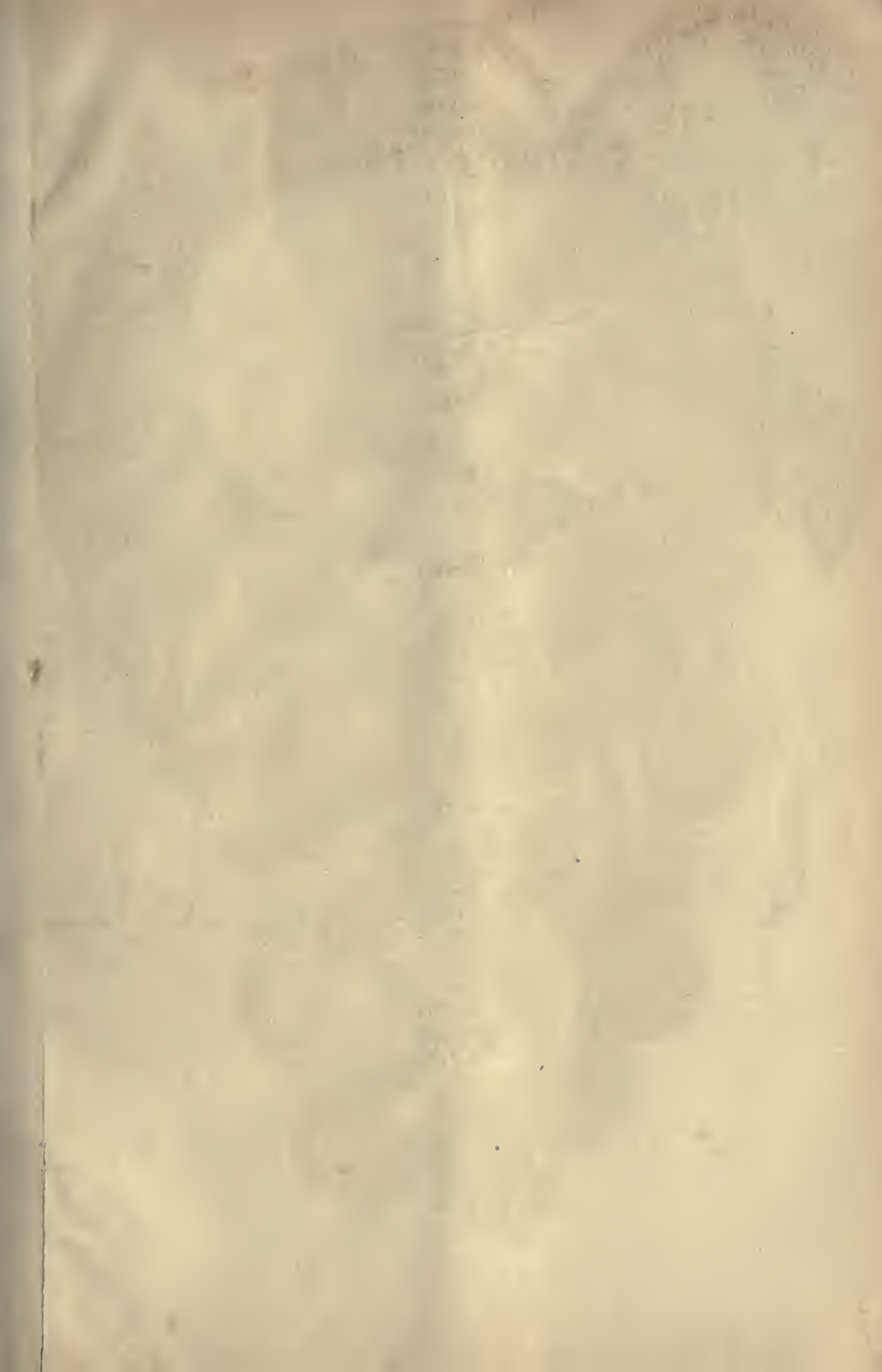
few roots will give an astonishingly abundant supply, much more tender and crisp and less violently sour than the out-door crop.—*American Agriculturist.*

PAPER BAGS ON GRAPES.

The following is the result of the *Rural New-Yorker's* experiment with paper bags:—

In order to ascertain what effect paper bags have in preserving grapes, we have left a number of bunches bagged until the present time (Oct. 20). To-day we removed them from several bunches of Wilder and Highland to find the berries plump and perfect in every way. Goethe (Rogers No. 1) were mildewed, though less than those uncovered. Nothing remained of bunches of El Dorado (Ricketts) except traces of the stems. This bagging of grapes, though it will not keep many of Ricketts's squeamish hybrids and other ne'er-do-wells of the same sort, is a splendid success upon most kinds, and the person who first suggested it is entitled to the thanks of all who love to cultivate the queen of fruits, as we think the grape is richly entitled to be considered. Nothing in fruit culture has ever given us greater pleasure than, upon removing the paper bags, to find the clusters as perfect as if made of wax. Everybody will bag his grapes, or some of them, at any rate, another year, and the grape displays at fairs will show the results.

At the October meeting of the Montgomery County (Ohio) Horticultural Society, Mrs. Longstreth stated that she had tried paper bags, and with results so satisfactory that she wished to impress upon all, whether they had a few or many vines, the efficiency of this rather novel and to many, new way of protecting grapes. She had noted the difference in vines so protected, growing by the side of those not protected. The difference in favor of those thus protected was so marked that she knows she does not err in commending the method in the highest terms. The labor of doing it is but slight. A woman can put on one hundred per hour. By this method the bloom is preserved and the mildew and rot guarded against.—*Rural New Yorker.*





PRENTISS.

White, best quality, early, good grower, very productive, hardy, good keeper. Is a native seedling with no foreign blood. Sells wholesale in New York at 15 to 18 cents per pound. Flesh tender, sweet, melting, juicy, with a pleasant musky aroma. Quality the best. Ripens with Concord.

THE Canadian Horticulturist.

VOL. VI.]

JUNE, 1883.

[No. 6.

WHITE GRAPES.

Just now there seems to be a strong desire in the public mind to get what are termed white grapes of good quality. There has been a good supply of black and red varieties, but none of the white grapes, up to a very recent date, have met the requirements of the time. Allen's Hybrid, though a beautiful fruit and very good in quality, had not sufficient constitution to endure the atmospheric changes of our climate, hence sooner or later it fell a prey to the mildew and ceased to be. Martha, though possessing great constitutional hardness and ability to endure our climate, is not enough better than its parent, the Concord, to suit the demand for high quality, and purity of flavor, nor for its time of ripening sufficiently attractive in personal appearance to meet all that is demanded. The Lady has not yet been long enough in the hands of the public, nor sufficiently widely disseminated to enable one to speak positively of its merits, yet if we may venture to give utterance to present impressions, we should say it too will be found wanting in constitutional vigor, and that while in the hands of some cultivators it will be valued for its early ripening and agreeable

flavor; in the hands of the masses it will not prove to be a success. The Pocklington has been the most extensively planted in Ontario of any of the white grapes, and very soon we shall know what is the popular verdict. Its large size and showy appearance, and its hardy constitution are in its favor, while its time of ripening and foxy flavor will leave ample room for an earlier variety having less of the native aroma. The variety which is so well illustrated in the colored plate which accompanies this number, known as the Prentiss, is now being tested. It is the intention of the directors of the Fruit Growers' Association to present to each subscriber who may desire it, a yearling plant of this vine in the spring of 1884, for trial. It is said to be a seedling of the Isabella, to ripen earlier than its parent, and to be very productive. The writer has tasted some samples of this variety shewn at the fruit exhibitions, and was favorably impressed with the quality. It is not foxy like Martha, Pocklington and Niagara, nor is it as high flavored as Iona, Jefferson or Brighton. In size of bunch and berry it is not equal to Pocklington, but better than Martha,

as a glance at the illustration will shew. It is to be hoped that those who plant it will not fail to report their opinion of its merits through the columns of the *Canadian Horticulturist*. This is the object which the directors seek to attain in the annual gift of some plant to our readers, hoping in this way to be able to disseminate valuable information from the experience of many in different localities.

MICE-GIRDLED TREES.

Many orchards have suffered severely from mice during the past winter, and though it is now too late to remedy the injury in the manner mentioned below, we nevertheless give it to our readers while the subject is before us, in the hope that at some other time they will be able to refer to it should occasion require.

The following illustrations which we have had prepared will fully explain the process. The method is taken from the *Country Gentleman*.

A tree that has been girdled by mice will present the appearance, more or less complete, shewn in the annexed cut. The sap can not circulate from the root to the branches because the bark has been eaten away, but if we can restore the



TREE GIRDLED BY MICE. means of circulation then the sap will ascend and descend as before. This is what it is proposed to do by means of small branches or young shoots inserted so as to bridge over the injured portion. The shoots or scions may be chosen of such size as that they shall be propor-

tioned to the size of the tree, and not too stiff to be somewhat elastic. These shoots are to be sharpened wedge form at each end, and openings made with a chisel in the bark above and below the girdled part. The manner of insertion is shewn in the illustration. It will hardly be necessary to say that the



SHewing HOW THE SCIONS ARE INSERTED.

a little, and when inserted be nearly straight. The sap will then flow through the bark of the twigs which have been inserted, and the circulation between the root and branches restored. When the work is completed the tree will have the appearance shewn in the following cut.



APPEARANCE WHEN COMPLETED.

After the scions have been inserted, from four to six in number, they should be bound firmly with a strip of cotton cloth to keep them in their place, and the points of insertion covered with grafting wax. The best time for doing this is early in the spring before the buds open.

The *Country Gentleman* gives an account of a person who had a large pear orchard girdled by the mice. He employed three men who thus bridged from sixty to eighty trees each per day with four scions to each tree, and out of the twelve hundred thus treated he lost only sixty trees, and that because

the work was badly done by a careless bungler. Where the work was well done all lived.

CORRESPONDENCE.

EXTERMINATION OF WHITE GRUBS.

It has been a matter of considerable surprise to me that such journals as the *American Agriculturist* and such bodies as the Fruit Grower's Association of Ontario, have decided that nothing can be done to cut short the supply of white grubs. To produce a marked effect in this case as in the case of most of the insects, a general war is highly desirable. If there is a supply of available children they will enter into the sport with great glee. A supply of ducks or other fowls to consume the raw product is no disadvantage. Early in June, so soon as the May beetles (the parents of the grubs) make their appearance, is the time to operate the most effectually. The beetles may often be found in the daytime in cracks and crevices in the ground, and more especially at the roots of plum trees, and here the ducks will be seen searching for them. But so soon as the shades of evening are fairly settled the great beetle harvest begins.

One child carries the stoppered can or large bottle, another carries the lantern, if the night is dark, and the fun begins. Many can be picked from the plum tree, but jarring is the quickest method. By making the round of the plum trees a few times the local supply will be bottled in short order. A few may be found on cherry trees and a few on raspberry bushes, but the plum trees are their headquarters.

By catching them every evening for a few weeks, one family will destroy beetles enough to furnish a full supply of grubs for several acres of ground. If fruit-growers generally would pay at-

tention to the beetles at the time spoken of their numbers would be greatly diminished. Where clean cultivation is the rule grubs do not incline to deposit their eggs. A growth of grass or weeds, or of say strawberries, gives them something to found their hopes upon. Sod land is often very full of grubs, which proceed to destroy strawberries or potatoes if planted thereon. After a few years good cultivation the grubs disappear. Salt is used as a remedy, but it is doubtful if enough to destroy the grubs would not destroy the vegetable crop as well. Remedies in this as in other cases get a cheap reputation because the trouble happens to disappear simultaneously with their application. I train hens to follow the plough and eat the grubs. Robins understand the grub business better than anybody else. My lawn was nearly destroyed by grubs. In the fall a few robins took the contract of resurrecting those grubs. They did it thusly: Hop along. Listen. Down goes the robin's bill. Out comes the grub. A brief ray of sunshine and then all is darkness for that grub. I suspect, too, that crows know more about grubs than they have ever told us.

E. MORDEN.

Drummondville, Ont.

CODLIN MOTH.

TO THE EDITOR OF THE CANADIAN HORTICULTURIST.

SIR,—We sustained very little injury last year from the ravages of the Codlin Moth, but in the course of the summer I noticed in the agricultural department of the *Toronto Globe* a receipt for capturing the moths, by hanging wide-mouthed glass jars under the branches of the trees containing a mixture of water and molasses, or sugar and vinegar, so I resolved to try it. I hung up in different parts of my orchard, about one acre in extent, three glass preserve jars with the above-

mentioned mixture in them, and a few days after found some of the moths caught. I let them remain, and in another week or so the water was full of moths and some beetles of a black color with wide ivory bands around them. I sent a specimen to the agricultural editor of the *Globe*, and found it was one of the burying beetles. I had to empty the jars more than once during the fall and replace the mixture, and destroyed some hundreds of moths. Whether they were all Codlin Moths I cannot say. One of my neighbors, who rather prides himself on his fruit-growing, was here one day, and I took him into my orchard and showed him one of the jars with moths in it. He took out his pocket-book and made a note of the proportions of water, molasses and vinegar, and after all made no use of them. I mentioned the matter to others, but could not get them to follow my example. The plum growers in the vicinity of Owen Sound were entire strangers to the curculio until last year, when that pest made its appearance in one or two orchards at the upper end of this township. I fear it will spread all over this part of the country in a few years more, and if it can only be kept in check by frequent jarring of the trees, I think I shall let the plums go—the few I have at least. I have a Mountain Ash growing near my house which was formerly despoiled of its berries before Christmas by the birds, but strange to say no birds meddled with it last fall, although in the winter it was visited by a small flock of the northern grosbeaks, that effectually cleared off its berries. I notice in the columns of the *Brant Review* that that pest, the English rabbit, is becoming troublesome in the County of Brant. Several had been shot or trapped in the gardens around Paris recently. They will hardly ever become such a nuisance as they are in Australia and New

Zealand. In a wild state in England the female produces eight litters of from four to eight, sometimes more, young at a time. The period of gestation is thirty days, and the female is in heat on the third day afterwards. They are capable of procreation at three months' old. It has been calculated that if allowed to breed unmolested one year, would increase in four years to considerably over a million, the precise number I do not now recollect. In England their increase is kept in check by the weasels, sloats, founarts, foxes, hawks and owls. I hope a combined effort will be made by the farmers, wherever they appear, to destroy them root and branch. They are said to be spreading over Australia at the rate of one hundred miles a year. At this rate how long will they be in extending from Paris, County Brant, to St. Catharines? Our long and severe winters may help to keep them in check in some degree, as they cannot well burrow in winter, and every burrow made in the summer would have a chance to be stopped up by the snow in the winter. They cannot so well burrow in heavy clay soils, but in sandy and loamy soils they can soon honeycomb a field unless they are destroyed.

CHARLES JULYAN.

Presqu' Isle, Sarawak, C^o. Grey.

SMALL FRUITS IN OROÑO.

MR. EDITOR,—Having been a reader of your valuable monthly for many years past, I think it no more than just that I should say something as to its merits. My father was a subscriber to it, I believe, from its very beginning, and after his decease I found it to my benefit to still continue it; and I would say farther, that the monthly, with its yearly premiums, I would not be without for any other published, and this

year I have added a few names to its already long list. I see that at the time of writing some of the premiums have come, and the subscribers are highly pleased with the same.

I do a little in the fruit-raising, especially the small-fruits, and grapes. I have some twenty vines growing, among them some sixteen varieties, viz., Concord, Burnet, Delaware, Salem, Agawam, Moore's Early, Brighton, Hartford, Janesville, &c., which have all fruited. The Burnet, which was sent as premium, has shown some splendid fruit, it being almost an amber color when ripe and most delicious. The Concord is a fine grape, a good bearer, and the berries very large. I believe it to be a first-class grape for anybody to cultivate. The Brighton seems to be a good grower, and the fruit ripens earlier than other kinds, and seems to be of a tasteless nature and very small. The Janesville makes very little progress, has fruited three years, is inclined to mildew or get scabby. The Delaware is the best grower of all, and the fruit is best for eating when first picked.

I have great trouble with the birds, especially the robins, and find no better remedy than shooting them as soon as the fruit begins to ripen. I have noticed complaints of the same quite frequently, but no remedy.

As for strawberries there is a considerable quantity grown, the favorite kinds being Wilson, Crescent and Sharpless. The first named I have grown bushels, but the latter kinds I have only planted one year. They are now all in blow, and the signs of fruit are apparently good. I have under cultivation, at present, only an acre.

Thinking I have encroached too much on your valuable columns, I am a well-wisher of the *C. H.*;

A. A. TUCKER.

Orono, May, 1883.

MR. EDITOR,—Will you please let me know through the *Horticulturist* if cuttings from the Concord grape, also Rogers' hybrids, Nos. 3, 4, 9, 15, 22, 44, can be propagated in the open air or any of them, and oblige a

NEW SUBSCRIBER.

Ans.—Yes; all of them.—Ed. *Can. Hort.*

TREE PLANTING ACT.

To Secretary O. F. G. Association.

DEAR SIR,—I am directed by resolution of the Council of the corporation of the municipality of Hope, to state that a by-law in conformity with the "Ontario Tree Planting Act" was passed at its last regular meeting, held on the 14th day of March, 1883.

Respectfully, &c.,

E. E. DODDS,

Clerk.

Port Hope, Ont., 22nd Mar., 1883.

It is gratifying to be able to lay before our readers this notice of the action taken by the municipality of Hope, and though this is the only letter of the kind received, we trust that it is not the only instance in which municipalities have taken such action.—Ed. *Can. Hort.*

TO THE EDITOR OF THE CANADIAN HORTICULTURIST.

SIR,—Please answer the following questions:—

1. For how many years is it advisable to grow raspberries on the same ground? 2. Also strawberries? 3. May grape vines and fruit trees be pruned when frozen? My Burnet grape has fruited for the last three years but has never ripened. R.

Toronto, 6th Feb., 1883.

1. From six to eight years. 2. Two, or at most, three. 3. If you do not wish to use the scions or cuttings and do not make large wounds.

HORTICULTURAL GOSSIP, XV.

BY L. WOOLVERTON, GRIMSBY.

The Universe.—I have just been reading a book that I would like to place in the hands of every horticulturist who has a taste for reading. It is entitled "The Universe; or, the infinitely great, and the infinitely little:" it is written by Dr. Pouchet, Director of the Museum of Natural History, at Rouen, &c., was published in London in 1882, and contains 518 pages with 270 fine wood engravings. Everyone cannot be a thorough student of such sciences as Botany, Entomology, Geology and Natural History, a knowledge of which to so large an extent contributes to success in fruit culture; nor has every one a taste for the scientific nomenclature or the technical language of science; but a book of this kind places before one, in a manner as attractive as a novel, a carefully arranged and beautifully illustrated mass of interesting details drawn from these subjects.

The vegetable kingdom, for instance, is treated under such heads as the following, viz.: The Anatomy of Plants, The Physiology of Plants, The Sleep of Plants, Vegetable Sensibility, The Movements of Plants, Physiology of Flowers, The Nuptials of Plants, Seed and Germination, Giants of the Vegetable Kingdom, Vegetable Longevity, Migrations of Plants.

I am informed that a most valuable and attractive book on the insect world will soon be published by the worthy President of our Society. I am sure from what we already know of his ability in that branch of study, and from his attractive style of writing, that we shall each eagerly await the opportunity to become possessed of so interesting and useful a work.

Some errors corrected.—Among other interesting points touched upon in Dr.

Pouchet's work, are those of Absorption and Circulation in plants. He shows that moisture and other elements are absorbed from the soil by the microscopic spongioles which terminate the young and almost invisible capillary filaments that cover the newly-formed roots. This absorption is not, however, direct, as any student of Botany knows, for there is no open end through which it can take place; but each spongiolate is composed of one or more elongated cells, through the young and thin walls of which absorption takes place by a process called endosmosis; and it is by the same process that the elements of nourishment are distributed from cell to cell throughout the tree. The young roots, however, soon become covered with a skin, which becomes harder, thicker with age, and through which absorption can scarcely take place at all. It will thus be evident that the common custom of piling manure and ashes closely about the trunks of trees for the purpose of nourishing them, is a great blunder, because that is just where the roots are old and hard, and least likely to absorb it. Manure should rather be scattered far about the tree, where the young fibres may take it up.

Again, a tree or plant will not absorb into its circulation the elements in the soil, until they become oxydized, or combined with the oxygen of the air; in this form they are soluble in water and easily imbibed by the roots. It thus becomes evident that one great use of cultivation is to expose the elements of fertility in it to the action of the air, in order that they may unite with the oxygen thereof, and thus be prepared to nourish vegetation. From the facts above cited, it is also evident that it is altogether a foolish notion to bore holes in trees and enclose therein sulphur, iron filings, or other drugs, with the idea of curing fungus, blight, or yellows, because these substances are

not in the proper chemical combination to be taken into the constitution of the tree.

The Field Mouse has been unusually destructive this winter, especially in the Niagara District. A snow fall, upon the surface of a strong crust, resulting from a previous ice storm, favored their depredations, and every orchard was more or less injured. Clean cultivation, and mounding up trees proved of no avail in this instance; well and ill kept orchards alike suffered.

Many of us folded our hands quietly by the fire during the great storm, consoling ourselves with thoughts of safety because of the careful heaping with earth which each tree had received in the fall; but from such peaceful thoughts we were suddenly aroused by the sad news of the loss of hundreds of beautiful trees. One orchardist lost three hundred fine young pear and peach trees; another, sixty bearing peach trees; another, his whole orchard of eight-year-old apple trees, and so goes the black list.

A few were thoughtful enough to trample down the snow about each tree, and this prudence was rewarded by perfect immunity.

One fruit-grower remarked that he had entrapped all the mice of his orchard by opening his cellar windows, coaxing them in, and then closing up the openings. Few people seem to distinguish between the house mouse (*mus musculus*), and the field mice (*arvicola*) which make their nests under fences, corn shocks, grass heaps, stone piles, and such places. I am very doubtful whether the latter would be found rushing from the field into a cellar, for he would be ill at home in a house.

The walnut, as an ornamental tree, was highly recommended at the winter meeting of our Association, and no doubt it deserves all the eulogies it re-

ceived, but I have one accusation against it. I have one near my house, and I find it is a very great attraction to red squirrels, which come in great abundance for the nuts. Some of these animals have had the audacity to gnaw a hole under the eaves; and entering, have made their home above the ceiling, where they spend the nights frightening sleepers by constantly nibbling their stolen walnuts. Nor is this the worst part of their mischief; for in fruit season, I find them running from the walnut trees across to my packing house, where, almost before my eyes, the little thieves will steal choice pears and apples from the baskets, mount to the loft, and sitting upon the top of a pile of peach baskets, destroy these beautiful fruits, simply for their tiny seeds!

Why did you not shoot them? says some one. I did shoot several, but it was discouraging business, because it always seemed as if two came to the funeral of every victim, and I concluded to blame the walnut trees for the whole mischief.

The Fruit Grower's Association of Grimsby held a special meeting in the Town Hall, Grimsby, on Friday, 9th March, 1883. There were about forty members present, Mr. Murray Pettit, of Winona, the President, occupying the chair.

There were three sessions, morning, afternoon and evening, during which lively discussions took place upon such broad subjects as "The Apple, The Peach, The Pear," etc. At the close of each discussion an opportunity was given for questions which called forth much useful information, based upon the results of practical experience.

The following are some of the questions and answers of which I took a note:

How do you trellis for grapes? I put down permanent posts at the ends of

the rows, and temporary ones between at a distance of about twenty feet from each other. Then during the second year I put on the first wire, for clean fruit and easy cultivation.

Do you advocate close pruning? No. I consider too much pruning unwise, but on the other hand, enough should be done to prevent overloading.

What distance apart do you plant? Concords ten feet, some rank growers, as Rogers twelve feet, Delaware eight feet.

What kinds do you advise? If I were planting one thousand vines, I would plant one-third of early kinds, as Moore's Early, Worden's Seedling and Champion; one-third Concord; and one-third of late kinds, such as some of Rogers' Seedlings.

What age would you plant? One year old, unless very carefully transplanted. If older, great care must be used to preserve the fibrous roots. I would not plant more than six inches deep, else their growth will be retarded.

What soil do you find best for Concords? This variety succeeds much better on heavy than on light soils.

During the day a resolution was passed that will be of interest to many of the readers of the *Horticulturist*. It was in appreciation of the benefits that have accrued to the Grimsby fruit section, from the labors of Mr. A. M. Smith, and was passed by a unanimous standing vote.

The resolution read as follows:—"We, the members of the Grimsby Fruit Growers' Association, in council assembled, desire and embrace the opportunity of publicly expressing the high esteem in which our pioneer nurseryman and fruit grower, Mr. A. M. Smith, is held by us all, and to assure him that we highly appreciate his earnest labors to improve and encourage the cultivation of those varieties of

fruit which are congenial to our climate; that we highly prize the benefits of his careful study, long experience and kind advice, which has always been earnestly sought, and as willingly given; and that we trust he may be long spared to live and enjoy the confidence and esteem of his fellow fruit-growers, and the reward of his untiring labors."

Mr. Smith said in reply:—"This resolution is very pleasing to me on many accounts. But though I may have been the means indirectly of benefit to the fruit growers of Grimsby, my object was not an unselfish one. I came a poor boy to Grimsby with faith in the capability of the section for fruit-growing, and the result has justified me in doing so. Had I remained here I might to-day have been a wealthier man than I am. I honestly believe that for all kinds of fruits there is not a more favorable section in Canada. If some of you gentlemen would take a deeper interest in the Fruit-Growers' Association of Ontario, I am sure you would be well repaid. It has done more than many of you suppose for the development of fruit-growing in Ontario.

Among the papers read was one on the Plum by Mr. G. Cline, and one on the Peach by Mr. E. J. Woolverton. On the whole the day was spent in a very pleasant and profitable manner.

CODLIN MOTH.

I received a letter a few days ago from Wm. Trelease, Professor, as I suppose, in Wisconsin University, at Madison, Wis. He had seen my letter of enquiry, addressed to yourself some time ago, regarding the Codlin Moth. He says:

"Experiments by Prof. Cock and others, go to shew that Paris Green or London Purple are sure and safe preventives for the Codlin Moth. The

most successful plan is to spray the trees thoroughly by means of a fountain pump or other force pump with the poison in the proportion of a table spoonful to each two gallon pail of water about two weeks after blooming, and to repeat the application a month later. The poison kills the young worms before they injure the fruit, and thus has great advantage over bandages or other traps. Analysis shews that none of the poison remains when the fruit is ripe. The same remedy has been tried for currant worms, and as claimed, without any cases of poisoning; but hellebore is just as efficient there, and so much safer that there is not the slightest reason for using the deadlier poisons on small fruits. This season I shall experiment carefully with the arsenites on the University orchard, both to test their efficiency and safety for myself. I write directly that you may not have to wait for the June number of the *Horticulturist*, if you wish to use the poison this year."

From the tenor of the above letter, I think he has probably communicated with yourself upon this very important subject. Not being certain, however, I have deemed it advisable to lay the contents of his letter in full before you, so that, if deemed advisable, you may use it for the June number of the *Horticulturist*.

I must say I do not know of any good, cheap, fountain, or other force pump of a kind very suitable or efficient. Indeed the only one known to me is the common window pump used by storekeepers. Can you oblige me by stating if you know of any good article, where to be had and price.

Yours truly,

GEO. STRAUCHON.

[Can any of our readers give the desired information?—ED.]

THE WILSON STRAWBERRY AS A MARKET FRUIT.

(For the *Canadian Horticulturist*.)

I see by the April number of the *Horticulturist* that Mr. Croil purposes going largely into strawberry culture. To assist him somewhat in his laudable endeavor I will give the opinions of three of the largest growers of strawberries in the United States as to the value of Wilson's Albany Strawberry. It was my privilege and pleasure, along with yourself, to attend the meeting of the Mississippi Valley Horticultural Society, lately held in the city of New Orleans. Among many valuable papers read and discussed three were on the culture of the strawberry, one from the north, one from the south, and one between the two extremes.

President Earle having introduced Mr. J. M. Smith, of Green Bay, Wisconsin, Mr. Smith said that the paper prepared by him was "Strawberries for the North, and How to Grow Them." After stating that Hovey's Seedling and Early Scarlet were introduced at an early day, about 1830, when Wilson's Albany Seedling began to make its appearance about 1860. It had been grown by a few for some years previous to the above date, although it was a novelty to many people until 1863. At this time it had taken possession of our northern markets, and as a market berry it has virtually held its own until the present time.

No one will claim that the Wilson is in all respects a perfect berry, still it has certainly shown itself to be the most remarkable one for the million ever yet put into cultivation."

He mentioned a great many new varieties which were worthless. He likes Seth Boyden, Triumph de Grand, Sharpless and some others, but not for market. Mr. Smith gave elaborate instructions on the cultivation of strawberries.

President Earle introduced Dr. McKay, of Madison, Mississippi, as one of the largest strawberry culturists in the United States, who read a paper on "The Strawberry Culture in the South." Dr. McKay spoke in high terms of the capabilities of the compact clay lands in Central Mississippi for strawberry growing, and the esteem in which the berries are held, commanding the highest price in northern markets. He said during the last ten years we have tested about forty varieties, covering many of the old and well tested standards, and such of the new as seemed to give the greatest promise, and while we are free to say that among the new there are to be found many charming and valuable acquisitions, we are equally free to say that up to the present time we have found no single variety to be trusted so implicitly as the Wilson's Albany. The great ease and facility with which it adapts itself to latitudes, soils and seasons, is wonderful. Wherever other varieties do well, as a rule, it does better. When allowed to fully mature on our southern soils, where the saccharine elements are more liberally developed in all our fruits than in higher latitudes, its proverbial acidity is so blended with the sweet, that it deserves high rank as a "home and local berry." He spoke highly of the Charles Downing, Cumberland Triumph, Monarch of the West, Newnan or Charleston. "But were we to select two varieties for the South, we say Wilson first, and Charles Downing next." The Doctor gave a deal of instruction regarding field and garden work to procure large crops and fine fruit.

Mr. O. B. Galusha, of Southern Illinois, read a paper on the question, "Is there a better market strawberry than the Wilson?" He spoke in high terms of the Wilson as a standard, profitable market berry, and a great bearer

with rich cultivation. After this paper was read, a general discussion took place on the merits of the Wilson and other berries. The Wilson came off triumphant.

All urged the necessity of high cultivation and irrigation; if these two important matters are attended to, success in the culture of strawberries is certain and profitable.

WILLIAM ROY.

Royston Park, April, 1883.

CHARLES ARNOLD.

(For the Canadian Horticulturist.)

Your words announcing in your May number the demise of our venerable friend fell like a sudden clap of distant thunder; so suddenly, so unexpectedly did they come. It scarcely seems possible that Charles Arnold, of Paris, with whose venerable form and energetic voice we were so perfectly familiar, has passed away from earth and all earthly scenes, and that your emphatic words are now seriously and eminently true, that "it is not to be our privilege to *listen to him again*." We cannot possibly realize the fact of the perpetual absence of Mr. Arnold from the various meetings of our association, so regular and so constant from its inception has he been. In his absence it will almost appear that there is no Fruit Grower's Association left, so much have we depended upon him as a part and parcel of us. Yes, we shall never see or hear him again in his kindly warnings and friendly counsels amongst us. Never again listen to the pleasing rehearsals of his ripe experience in fruits or in flowers. Let us ever be thankful for the kind and instructive words he has so left on record in the publications of our association. Although their author has passed away, yet those words he has left behind can never pass away, they

are enduringly the property of the association. In these he is ever present and ever speaking, though bodily absent. They all teach us to study and to love the beautiful in sentiment and in nature. I shall be ever thankful for that last effort of his pen so pleasingly rendered, entitled "The seat on the hill top beneath the old tree," which he read at our last association meeting in Toronto, a copy of which was given in the *Canadian Horticulturist*. This is his epigraph and the last note of his familiar pen. It shows us that his large and warm heart still lived in the deep contemplation of the beautiful in nature and sentiment, and astonished us with its vigor. I can never forget his parting from us. Neither collectively nor individually had we the opportunity of offering him a parting greeting, a kindly shake of the hand, or a last good-bye! Though he was so familiar with the association, its members and its work, yet he parted from us in a most unexpected and quite unceremonious manner. On the last day of our meeting, at about 4 o'clock in the afternoon, Mrs. Arnold came into the room and shortly afterwards he left with her, and we never saw him again. I saw him pass out, and should have liked to have spoken to him, but thought we should have another opportunity to do so, but it never came, and thus he left the meetings of the association and its work for ever. Oh, let us remember that although as Longfellow beautifully says, "Life is earnest," it is also remarkably short and very uncertain. And whatever our hand findeth to do we should do it with all our might, and like our dear departed friend, be ever up and doing, "while it is called to-day, for the night soon cometh wherein no man can work."

Yours fraternally,
B. GOTT.

Arkona, May 14th, 1883.

SUGAR OR ROCK MAPLE.

(*Acer Saccharinum*).

BY JACOB W. MANNING, READING, MASS.

This is in a broad sense an American tree for it extends from the extreme eastern part of North America to the Eastern Rocky Mountains, and from the highlands of the Gulf States to the watershed between the waters of the St. Lawrence and Hudson Bay. In all this territory it is found at frequent intervals on elevated land and along rivers, and is at home in all rocky formations.

This tree is often from three to five feet in diameter, and seventy to eighty feet high, large and straight enough to make ship-keels, growing naturally without any aid from man.

I measured a tree in Northampton, Mass., that had been planted sixty years that was eleven feet six inches in circumference, three feet from the ground; even this is small compared with some natural trees seen in old pastures.

The wood is close grained and solid, and one of the handsomest of all light colored woods for furniture and house finish. The bird's-eye, curly and branched maple veneers that make such a rich and varied finish are made from it. It is almost the only wood used in the manufacture of boot and shoe lasts, for which a surprisingly large amount is used, and in many other industries where a solid and close-grained, but light wood, is necessary. As fuel it is but little excelled by any other wood.

No other native plant growth produces such delicious syrup as the rock maple. A sugar orchard is a valuable addition to a farm; even our street and lawn trees can be tapped without injury; they appear to grow as finely and live as long as those not robbed of their sap, which one would suppose was their vital fluid.

As a street, lawn or park tree it is justly valued as one of the best American trees. It is thrifty, comparatively free from insects, and is sure to grow into a well-balanced tree in nearly every locality. The shade is very dense, and yet grass will grow quite freely under single specimens where the wind blows away the leaves.

In planting to prevent monotony it is well to intersperse other trees of different outline. The gorgeous autumn hues of our forests are largely due to this maple. I witnessed at Newburg, N. Y., on a cloudy fall day in suburban home grounds, laid out by the lamented A. J. Downing, the very best effects in the varied hues taken on by this tree; interspersed among other kinds, each with its own peculiar autumn color, and some still green, but the rock maple outshone them all.—*Boston Traveller*.

THE PRENTISS GRAPE.

The following is from T. T. Lyon, the well-known pomologist of Michigan, written for the *Rural New Yorker*:—The Prentiss grape is not fully tested away from the place of its origin, hence little can be said of it from personal experience. I have found it a vigorous grower with healthy foliage, and have yet to hear of any objection to it in this respect. If I may judge from specimens seen at various exhibitions at which I have been privileged to test it, in comparison with many others, I must characterize it as one of the finest of the new white grapes, so far as appearance and quality are concerned; while the bunch is of medium size, and, from its compactness and the toughness of its skin, it is, to all appearance, well qualified to bear the rough handling to which a market grape must be subjected.

The following is also taken from the *Rural New Yorker*:—This new and

delicious grape has been widely disseminated. The cluster is of moderate size, very compact; berries a little below medium, of a greenish white, and generally crowding in the clusters; the skin, though thin, is tough and it bears handling very well, and it is an excellent keeper. Next to the Duchess, I think the Prentiss the best white grape in quality, but in hardness it surpasses the Duchess, though not equal in this respect to the Concord. I have planted some fifteen or eighteen vines in my vineyard, and think it promises well; next year I shall expect fruit. Like the Delaware it will need the best care and management to make it successful.—P. M. AUGUR.

SORGHUM.

The promise of sorghum as a sugar-producing plant is now large. It seems safe to predicate that before many years, through the improvement of this plant and through the better acquaintance with its habit of growth, we shall be enabled to so increase its percentage of sugar, and so decrease the unfavorable combinations which disturb the manufacturer as to secure for consumption home-grown sugars. Before this, however, shall be accomplished, it will be necessary to determine experimentally or empirically, many points concerning the plant. While the apparent interest of the grower and the manufacturer may not at first seem identical, yet it will be found in the end that their interests are in common. It is well worthy of trial, whether or not, the growing of sorghum for sugar purposes may not require more distant intervals of planting, so as to secure the maximum of light and the minimum of shade to the growing plant. In Trinidad it is claimed that sugar canes which are exposed to the light during growth give far better results in sugar

than those which are shaded.—E. L. STURTEVANT, *Director, N. Y. Experimental Station.*

THE SWEET CORN CANNING BUSINESS.

The extent to which this business is carried on by our neighbors may be gathered from the following figures.

Why is it that so little is done in this line in Ontario? Surely we have a climate fully as suitable to the production of sweet corn as that of Maine, and there is a market open to us as well as to them. Are we lacking in business capacity as a people, or unable to conduct such enterprises successfully? Surely we cannot admit any such thing, and yet why is it that we have no such corresponding establishments in this country? This is what is being done in Maine. We copy from the official report of the State agent.

"The Winslow Packing Company operated fifteen factories in this State during the year 1882. Following is a list of the places where they are located, and the acreage of corn grown for each :

	ACRES.
Riverton.....	75
Yarmouth....	73
Mechanic Falls.....	185
Farmington.....	150
Wilton.....	150
Fairfield.....	180
Skowhegan.....	245
West Waterville.....	150
North Anson.....	190
Buckfield, Canton.....	205
Norway.....	180
Bridgton.....	175
Hiram.....	60
Raymond....	80

"The total product of the above-named factories was 125,000 cases of two dozen cans each, or 3,000,000 cans. This company also packed 7,216 cases (173,184 cans) of succotash, (corn and beans). They also put up 12,207 cases (292,968 cans) of apple, and 8,462 gal-

lon packages of the same product. The apple thus put up is cored and quartered, and when opened much resembles the choicest green apple.

"The Portland Packing Company operated seven factories. The table below gives the location of these factories and the number of acres grown for each in 1882 :

	ACRES.
Cumberland Mills.....	250
Sebago Lake.....	360
Naples.....	400
Fryeburg.....	225
Winthrop.....	250
Vassalboro'.....	200
Wells.....	350

"The total amount of corn packed by this company was 90,000 cases of two dozen cans each, or a total of 2,160,000 cans.

"Burnham & Morrill, Portland, operated in 1882 seven factories, the following are the places where located and acreage of each :

	ACRES.
South Paris.....	400
Minot.....	375
East Baldwin.....	50
West Scarborough.....	
Denmark.....	350
Harrison.....	400
South Norridgewock.....	400

"The total amount put up by this firm was 96,000 cases of two dozen each, or a grand total of 2,304,000 cans."

Thus it will be seen that these three companies put up over seven millions of cans, and took the product of over six thousand acres of sweet corn. The agent states that within the past few years a large number of such establishments have sprung up, so that he gives the total number of cans put up in 1882 as 10,881,400. The prices paid to the farmers is two cents per pound, which in favorable seasons, and with good cultivation, averages forty dollars per acre. The varieties most grown are

Early Crosby, Early Triumph, and Early Minnesota.

Now we can grow not only these kinds but also the late maturing varieties, and extend the season of sweet corn canning in some parts of Ontario a month longer than in Maine. Why do we not can the canned sweet corn that our own people consume? Is there a reason, and what is that reason?

IS FRUIT RAISING PROFITABLE?

The *Williamette* (Oregon) *Farmer* thus comments upon this subject, after stating that W. H. Jessup, a successful fruit-grower in California, is of the opinion that the market for fresh fruit is limited and uncertain, but that in canning or drying fruit for the markets of the world there is scarcely any limit or uncertainty. Of the two Mr Jessup gives the preference to the dried fruit business, as being the most certain in the long run, because the fruit can be put up cheaper and transported at less cost than the canned fruit, while, if properly evaporated it possesses all the good qualities of canned fruit of the same grade.

The *Farmer* gives the following particulars respecting dried fruit:

Apples turn off 5 to 5½ lbs. of dried fruit to a bushel of 50 lbs. weight, so that they hardly yield more than ten per cent. of dried product. Machine dried apples sell readily at 9 to 10 cents and estimating the product at 5½ lbs. to the bushel, the result would be 50 to 55 cents per bushel. Any person can see that to dry apples in the orchard, and realize that much, will pay handsomely.

Pears turn off about 7 lbs. per bushel, as near as we can estimate, and will sell as well as apples, and perhaps better. So few pears are dried that we have never made an estimate, but we have

for two years in succession dried Bartlett pears very nicely, and sold the products at 16 cents per pound, which was \$1 per bushel.

Plums yielded from 20 to 25 lbs. to the bushel of 50 lbs. We noticed that Peach plums, Columbias, Coe's Golden Drops, Yellow Egg plums, grown in an orchard, turned off 25 per cent. of dried product, say 12½ lbs. to the bushel, and as we sold extra choice fruit for 16 cents, well packed, that was \$2 per bushel. But 16 cents is over what we can expect. Suppose that really choice pitted plums sell readily for 12 cents, which is probable, and that they turn off 10 lbs. per bushel, then it is evident that there can be great profit made raising and drying them.

Prunes, again, dried with the pits in, turn off 28 to 34 lbs. per 100 weight. If we average them at 15 lbs. per bushel, and can sell at 8 cents per pound, there is \$1.20 per bushel.

Take the range of choice fruits of the varieties for drying of plums and pears, and it must be apparent to every one that there is great profit in growing and drying them for market. If the grower can net 50 cents per bushel for the fruit on the tree, there is no branch of husbandry that can be more profitable.

One thing to be remembered is that there is no fruit tree more healthy than the plum and prune, and no tree bears more certainly and more abundantly. This is a fact that is well established in our state.

We figured up carefully the whole matter before setting out an orchard, and came to the conclusion that it will pay handsomely to grow fruit when prunes will be worth 6 cents, and pitted plums 8 cents per pound. Even at that price the product will average to yield \$1 per bushel in value, and the expense of curing need not be over one-fourth of that amount.

We have no sympathy with the sensational figures put forth by over-sanguine persons. It is true that some fruit may sell at fancy prices, but we must count on seeing an immense product of canned and dried fruits on this coast, and calculate that prices will drop with production on a large scale. In the Eastern states, and even with us, they largely consume Turkish prunes of a very cheap grade. They are imported for about 4 cents and a high duty. If we make a better prune and compete with their imports, we have still to sell at a low price as soon as the market is over stocked. We hold that we can thus compete, and yet make a good profit on our fruit.

THE PEACHES GROWN FOR MARKET IN DELAWARE.

Mr. P. M. Augur, of Middlefield, Conn., made a visit to the peach orchards of Delaware, and gives the following statement with regard to varieties there :

"Those have been most successful who have held to the old, well tried varieties.

"The Alexander, Wilder and Amsden are about the same. The first being considerably planted for very early shipments. Hale's rot badly in a wet season. Beatrice too small. Early Rivers rot nearly as badly as Hales. But none are as good as Troth's Early except in time of ripening. Early York is nearly superseded by Mountain Rose. Old Mixon is very hardy and a good bearer, and a good peach but comes in the glut of the season. Stumps, as good, closely following Moore's Favorite, very good, resembles Old Mixon. Ward's Late is good, following the Stump.

"Among yellow peaches Crawford's Early has had a great run and still has,

but the impression is that Foster is going to prove better. Crawford's Early is rather tender and a little inclined to deceive. Reeve's Favorite is one of the choicest peaches following Crawford's Early, is considered not quite productive enough, but this year the trees are literally breaking with their load ; quality best.

"Crawford's Late is one of the most important peaches in Delaware, has held, does hold, and will hold a prominent place.

"Susquehanna is perhaps the very best peach, but not productive enough to be much planted.

"Mary's Choice is very good or very poor, depending on the amount of fruit it is allowed to carry. When overloaded it is poor, when thinned it is superb. It is productive to a fault, and needs thinning.

"Salway at its best is superb, inclines in Delaware to ripen one-sided, does better on the Hudson.

"Smock is *the late* peach, fine for canning and will yield to the basket one lb. more dried fruit than any other sort. Many say that in planting a large orchard the Smock should have one-third the ground.

"What is imperatively needed now is a better early shipping peach. Hale's Early rots, Alexander and all its class are soft and cling. A Mountain Rose, as early or earlier than the Alexander, would be a fortune to its possessor if rightly managed.

"It is rumored that such a peach is in hand in southern Delaware ; indeed I saw the tree, and those who are authority in such matters say it is a great thing. But it is too early to say more yet.

"The market calls for and will certainly have such a peach some time in the near future."

VEGETABLES IN ENGLAND.

The *Pall Mall Gazette* thus speaks of English-grown vegetables as compared with those of Canada:—

“Of thorough going fruity vegetables—such as the tomato—we in England know nothing. We never have sun enough to ripen them properly; and even with all the appliances of modern gardeners, they never get thoroughly red and soft throughout in our gardens as they do in the open air under a Canadian or Italian sky. They always have a half-green taste, and are wholly lacking in the true rich tomato flavor. Indeed, the tinned American specimens, though tasting of the solder, of course, are better savored after all than our poor, starved, sunless English things. As to purple egg-fruit and green chow-chows, we know them not at all; while the profusion of rich red-fleshed water-melons and primrose-skinned squashes and golden pumpkins in a Massachusetts market would astonish Covent Garden. These things require the sun to ripen them, and we see his face here as a rule for some two and a half hours weekly, as duly registered at Glynde Place, Lewes.

“Then, again, there are the winter cherries, the sweet potatoes, and best of all earthly vegetables, green Indian corn, eaten off the cob with fresh butter, and likeliest to nectar of all mortal delicacies. As for pulse generally, our beans are all stringy; we have neither the variety nor the tenderness of the American bean. Our peas have some good points—for English peas; but they are not half so large, or luscious, or melting, as American peas. They take too long growing, and have got old and hard before they are big enough to pick.

“In the matter of leafy vegetables we can do a little better, but not enough to boast about. We are strong in

salads; our climate provides us with plenty of fresh green lettuce, and plenty of slugs, too, to hide in its recesses. But our cauliflowers and broccoli are not nearly as good as the American; they are neither so white nor so delicate in flavor. We can grow cucumbers (under glass), because cucumbers are eaten green; but what a miserable farce are our vegetable marrows!

“What is true of vegetables is even more true of fruits. To be sure, our English hot-house grapes are the best in the world; but for strawberries, raspberries, currants, gooseberries, plums, and cherries, we must go to America.”

SHALL WE PLANT LARGE OR SMALL TREES?

A resident of one of our large villages, who had come into possession of a fine lot which he wished to plant, but who had had little experience with tree culture called on a neighboring nurseryman to make purchases. He wanted nothing but large trees—two inches in diameter if he could find them, and ten feet high. He cared much less for the kind than for the size—anything which was gigantic, early or late, fruit or ornamental, was eagerly taken. The nurseryman frankly gave his opinion that trees of moderate size would be better, but the purchaser quickly replied, “I want big trees *now*—I may not live for the small ones to grow up.” He carried off a load of monsters. In a few years he came again to make additional purchases. The nurseryman at once remarked, “I suppose you want all the largest trees you can get—I think I can supply you.” “No! no!” exclaimed the purchaser, “I’ve had enough of big trees! No more for *me*! Those I got of you have scarcely grown any since, the smaller ones have overtaken them, and they are ever so much handsomer

and more thrifty—give me small, vigorous trees.” This incident tells the whole story, and should be remembered by inexperienced planters. Many years ago, Sir Henry Steward made a plantation of large trees in the moist climate of Scotland, but they made little growth and had a sickly appearance. It was then that Loudon, with his long and extensive experience as a landscape gardener, offered to make a public test with any one who would try large trees, he himself planting small and thrifty ones with full roots, in rich, deeply trenched, and well cultivated ground, with the confident assurance that in a given number of years he would show trees not only larger but immeasurably finer in appearance.—*Country Gentleman*.

THE EARLY PEACHES.

Mr H. M. Engle, of Marietta, Penn., wrote to the *Gardener's Monthly* the following account of his early ripening peaches. The public will look with interest for his report this season:—

We have fruited this season twenty-six varieties claimed to be from one to three weeks earlier than Hale's, a number of which fruited on the same grounds two years ago, and several for the last six to ten years. I have settled down to the firm conclusion that there is not three days difference in time of ripening of the following varieties, viz: Amsden, Alexander, Wilder, Musser, Bowers' Early, Baker's Early, Alpha, Governor Garland, Sherfey's Early, Nectar, Early Canada, Waterloo, Downing, Saunders, Cumberland, Honeywell's, Climax, Briggs May, Our No. 4. The eleven first named have leaves with globose glands. Waterloo has reniform glands, and the seven last named are glandless. All the above named varieties are just over, while Early Beatrice, Louisa and Early Rivers are just coming in. We picked the first ripe peaches

about the 22nd of July, while two years ago the first were ripe about 26th of June. Early Surprise is just coloring and will ripen about with Hale's. Early Rose and Early Lydia quite green. Flater's St. John, said to be the earliest yellow peach, will ripen, I think, with Troth. In testing these varieties we had fixed on several as earliest, but find that comparative earliness varies with same varieties, on the same ground, and with the same trees, in different seasons.

THE FUTURE OF CANNED GOODS.

The *Sea World* says “The future of the canned goods trade of this country is on the whole very promising, though the business is now cursed by many frauds that would kill a trade of less vitality than that of packing. The preservation of fruits, vegetables and meat in hermetically sealed cans is an industry of comparatively recent origin, and yet it is of vast extent and importance, giving employment to millions of invested capital and thousands of operatives. As extensive as this trade already is, it is yet in its infancy. This is a vast field awaiting further development. At the present time there are thousands of families who will not use canned goods on account of the abuses that now curse the trade, and from this cause their consumption is greatly restricted. No one has yet formed any idea as to what vast extent canned goods would be consumed if there were no light weights or trashy goods, and it was known that the most scrupulous care was exercised in the packing of these goods. Unfortunately there is among people a strong belief that but little cleanliness is observed in packing-houses, and this, of course, keeps many from eating canned goods who would otherwise do so. This belief is, to a certain extent, based on good grounds, for there are some houses which

do not exercise the proper neatness and care in handling their fruits, just as there are some houses that are willing to injure their trade by packing trash. We are glad to say, however, there are many houses to which this does not apply, for they require as much cleanliness and neatness in their packing-houses and in the canning of fruits, as can be found in private kitchens. These firms have justly won a high reputation for their goods, and are more than repaid by the enhanced prices which they command. When all packing-houses are run on the same principle, and light weights and trash are no longer known, then the canned goods trade will begin to hold the position which its importance should command."

A TRELLIS FOR PEAS.

The best substitute for pea brush we have found, is a trellis of galvanized iron wire. The peas are sown in double rows, six inches apart. A post, six inches in diameter, is set firmly at each end of the row; it may be round or half round, set three feet in the ground, and of a height suited to the variety of pea. As soon as the vines are large enough, the wire is made fast to the post, about six inches from the ground, carried to and passed around the post at the other end, and back to the starting point. Here it is made fast; it may be cut off, but still better, two or three turns are taken around the post and another double wire stretched about eight inches above the first, and so on until as many wires as needed are put in place. We use No. 18 wire, which measures 150 feet to the pound. If over 200 feet long, a similar post should be set mid-way of the row. Stakes (plasterers' laths will answer) are set every ten or fifteen feet along the row, to keep the wires from sagging. These have notches cut in them, in which the wires are placed; or the wires may be

attached to them by means of a small wire or cord. When no longer needed, the wire is wound up upon a reel, and, with the posts, stored away for another year. Pea-growers for market allow the vines to lie upon the ground, and claim that the crop is not enough larger when brushed to pay the cost of cutting and placing the sticks. In the garden, neatness, and especially the greater ease of picking, make it necessary to use brush, or a substitute. Those who cannot get brush, will find the wires, supported as above described, very convenient. The chief precaution to be observed is, to have the wires of this trellis so near together that the vines can reach them as soon as a support is needed.—*Am. Agriculturist*.

WATERMELONS.

J. W. Shaw, of Ohio, writing to the *Fruit Recorder*, tells how he succeeds in raising melons:

"The ground was in corn last summer and produced such a yield that the thought struck me that it would be a good place for watermelons. I plowed the ground when dry, (manured heavily with sheep manure before for corn,) and manured the melons in the hill. I first harrowed the ground until it was as fine as an ash heap; furrowed the ground one way; made nice, flat hills; planted from three to five seeds per hill and thinned to three plants to the hill; I manured a part in the hill with sheep manure, and a part with rich black loam which I obtained from the fence corners; covered about two inches deep. The melons came up and grew very fast; such leaves, I never saw the like, and I never saw such a set of melons anywhere; vines, very dark green. A part, that was not manured in the hill, does not look so well. It has been very little trouble to keep the bugs off this year; I put fine plaster on

the vines once a week ; I think this helps to keep them away. Have hoed them three times ; twice after rain, as soon as the ground would permit, once when dry ; after working, I go over the ground and pull up all large weeds, if any. Melons should be worked well at the start, then the vines will not trouble you so much."

THE FLOWER GARDEN.

SOWING SEEDS.—Annuals are propagated exclusively from seed. They are sown after two ways : the one in the borders where they are intended to remain ; the other in prepared beds, from whence they are translated to the flower garden. The former plan, although the most simple and most ordinary adopted, has many inconveniences ; one of the principal of which is, that the ground is occupied for a long period before they arrive at perfection. It would, therefore, be the more advisable, if it were possible, to sow all annuals in prepared beds, and afterwards transplant ; but there are some, such as poppies and similar-rooted plants, that do not bear transplanting, so that these, under any circumstances, must be sown where they are to flower. It is also essential, in order to ensure success in raising seeds of any kind, to bear the following important rule in mind. That the smaller the seeds, the less deeply should they be covered with earth ; indeed, some seeds are so fine that they ought to be sprinkled slightly over the ground, and should the weather at the time be very dry, a thin layer of damp moss ought to be placed over them till they begin to germinate ; but there are few hardy annuals that require such extreme attention as this, such care being more intended for the raising of *Calceolaria* and other minute seeds in pot-culture.

BIENNIALS are those plants, principally hardy ones, that do not generally

flower until the second summer's growth and when properly planted out grow most vigorously the first summer and autumn, then bloom profusely the second season and die. The section includes some splendid flowers for effect, scarcely equalled in any other for decoration either in the open beds or in pots. Those which are inclined to an annual style of growth should be sown not earlier than June and July, to avoid grossness of growth, which is unfavorable for severe winters ; such are Wall-flowers, Canterbury Bells, Borage, Fox-glove, *Oenothera*, Honesty, Sweet Williams, Hollyhocks, Sweet Scabious, *Dianthus corymbosus*, French Honey-suckle ; and those inclined to a perennial or triennial duration, may be sown late in May to obtain extra size and vigor ; such are *Campanula pyramidalis*, blue and white, Valerian, some species of *Dianthus*, *Verbascum*, Rose Campion, *Antirrhinum*, Brompton Stocks, &c.—JAMES VICK.

IMPROVEMENT OF SCHOOL GROUNDS.

The Michigan State Horticultural Society has for some years been awakening sentiment looking toward the ornamentation of the country school premises in that State.

The society proposes this year to offer an additional inducement in the way of premiums to the school districts that will make the best exhibits of flowers produced under the care of the children upon the school premises. The following is the exact wording of the offer, as it will appear in the premium list :

"For the largest and best collection of cut flowers grown by pupils in school grounds of any school house in any district in this State ; first premium, \$15 ; second premium, \$10 ;

third premium, \$5 ; fourth premium, \$3."

The State Fair, where the flowers are to be exhibited, will be held in Detroit in September next, and the State Horticultural Society will undertake to receive the flowers, display them, and see that a proper viewing committee passes upon the relative merits of the various exhibits.

There is great room for improvement in the grounds about our school buildings in Ontario. For the most part they are as barren of vegetation, other than weeds, as the Desert of Sahara.

THE VICTORIA GRAPE.

Miner's Victoria, a white seedling of the Concord, has been praised by the *Rural* in past years, and this year's experience does not incline us to recall or moderate anything we have said. It is with us the hardiest and most productive of vines, our only specimen never having been injured or mildewed in the least, while it yields more bunches and more perfect bunches than any other vine in our collection that has been well tried. It ripened this year September 5.

Utterly alone has the *Rural* kept this fine variety before the public, and we dare to say that, in spite of its slow entry into public favor, it will at length make its way there. Its quality is fully as good as the Concord ; it will ship as well ; it ripens as early, and the canes have remained uninjured with us while those of the Concord have been killed. We speak thus confidently because we know from experience that any variety of grape that will thrive in the *Rural's* New Jersey Experiment Grounds, will thrive over a very wide extent of country. The bunch is compact and a trifle clustered. Berries are large, round. The skin rarely cracks, and is covered with a dense white bloom.

Our only specimen of the Victoria was given to us by Mr. Miner, the originator, in the Fall of 1878. It bore the second and every year since. The present season we counted (Sept. 15) 55 bunches, all of medium size, some shouldered, some not—all free from rot or blemish.—*Rural New Yorker*.

THE HYBRID CLEMATIS.

Dr. Geo. Thurber gives valuable information on the Clematis in the *American Agriculturist* for May, from which we clip the following :

Nothing in the history of horticulture is more striking than the improvements that have been made in the genus Clematis during the last twenty years. We leave out of consideration at present the fine, erect, herbaceous species, and only refer to the climbers, known under the general term of Hybrid Clematis. The production of these plants was made possible by M. Von Siebold, who brought from Japan, *Clematis patens* and other large flowered forms. Others have since been introduced from Japan and China. With these materials, English and French florists have produced a series of hybrids, which, for size, beauty of form and richness of coloring, can only be described as wonderful. During the last twenty years there has been an almost annual succession of these new varieties, until they are now so numerous that an adequate descriptive catalogue fills a good-sized volume. The methods of propagation have been so far improved, that what were not long ago costly varieties, are now within the reach of persons of moderate means. Considering the great beauty of these flowers, they seem to be slow in acquiring a popularity in this country. If one has room for but a single climber, he can select nothing more satisfactory than a cle-

matic. If he wishes to take up a floral hobby, and make a collection of choice varieties, he can find no class of plants that possesses greater interest than these. The varieties are hardy. They climb from four to twelve or more feet. Some bloom in early spring, some in summer, and others continuously. In size, the flowers range from two to ten inches in diameter. They are single and double, and vary greatly in shape of parts. The colors are from white, through delicate tints of blue, lavender, and wine colors, up to the most gorgeous of purples, with a great variety of shadings. The vines, if given a low support of some kind, will soon cover it with a sheet of flowers, or they may be laid flat upon the ground and pegged down to form the most effective of bedding plants. We have not seen them tried in window or balcony gardening, but have no doubt that they will be found among the most satisfactory climbing plants for this use.

TRANSPLANTING.

There is a principle in transplanting cabbage and other succulent plants which is unknown, or overlooked by many parties. They seem of the opinion that the sooner a plant is reset after being taken from the seedbed, the more sure it is to live. A moment's thought will show the fallacy of this idea, if it does not a little practice will.

The plant gets its supply of moisture and sustenance from the soil by means of numerous small mouths at the extremities of fine rootlets. When the plant is removed from its seedbed, more or less of these are of necessity broken, and the evaporation is continually going on from its leaves more or less rapidly, according to the degree of heat and sunlight it is made to stand. If transplanted at once, it follows that the plant must of necessity wilt badly, and if the weather is hot

and soil dry it may never survive. If, however, on being removed it has its roots "puddled" in muddy water, and is then laid in a cool, moist place, in from twelve to forty-eight hours numerous small white rootlets will be formed, the leaves will stiffen up and every energy of the plant is set at recovery. In other words, the plant is convalescent, and if given half a chance for its life will commence growing with renewed vigor. For these reasons, plants which have been well packed and transported considerable distances by express will often wilt less on setting, and start to growing sooner than those which are reset at once when taken from the seedbed.—*Raleigh, North Carolina, Farmer.*

BOOK NOTICES.

INSECTS INJURIOUS TO FRUITS.—

This work, by William Saunders, F. R. S. C., illustrated with 440 wood cuts, has long been needed by the fruit-growers of America. As the years pass on the insect enemies that prey upon our trees become more and more serious in their depredations. This book will make our fruit-growers acquainted with those insects which prey upon their trees and fruit, and with the means of combating them. The first part of the work treats of the insects injurious to the apple; first, those that make their attacks upon the roots, then those that prey upon the trunk, and those that confine themselves to the branches; next those that feed upon the leaves, and last, those that destroy the fruit. In the same manner the insects that prey upon the trunk, branches, leaves, and fruit of the pear, the plum, the peach, the apricot, nectarine, cherry, quince, grape, raspberry, blackberry, strawberry, currant, gooseberry, melon, cucumber and orange, are described and treated. Under each of these heads is given a de-

scription of those insects that tend to keep in check these depredators, so that the fruit-grower may be able to recognize his friends and tenderly spare them, while he destroys without mercy those that destroy his crops. No work covering this ground has hitherto appeared, and it will be found exceedingly convenient to have the information upon these subjects placed together in convenient form, where the matter is so arranged that the information can be obtained with the least possible consumption of time. Hitherto the information contained in this book, if it has existed at all, has been scattered through numberless volumes of reports, monthly magazines and public documents, where they were comparatively hidden from the person seeking information. The thanks of the fruit-growing public are due to Mr. Saunders for the pains he has taken in thus bringing together in compendious form information so very desirable, and yet for the reasons before stated, almost entirely unobtainable. Mr. Saunders possesses, in an eminent degree, the qualification requisite for the production of such a work, having made insects a study for more than a quarter of a century, and that specially with a view to their relation to our fruit-growing interests. Himself a fruit-grower, and President of our Fruit-Grower's Association, he has taken a deep interest in all that affects fruit production. Much of the information contained in this work is the result of his own personal observation and experience, and our fruit-growers can rely most implicitly on every statement which the work contains. Of the book it is but just to say that it is printed in clear type, on beautiful paper, and the cuts are executed in the most perfect manner. Nothing has been left undone to make it a complete compendium of our knowledge of the subject of which it treats, worthy of being

placed in the hands of every person interested in these matters. The author has dedicated it to the fruit-growers of America, in the earnest hope that it may be of practical use to them in their warfare with destructive insects in which they are constantly engaged. We confidently commend the book to every grower of fruit as an indispensable companion.

REPORT ON RUSSIAN FRUITS.—Mr. Charles Gibb, of Abbotsford, Quebec, visited Russia last summer with the view of ascertaining what varieties grown in the more northern portion of that country are of sufficient value to be introduced into the more northern portion of Canada. Since his return he has embodied his observations in a report, for a copy of which we are indebted to him. He states that the names of fruits in Russia are hopelessly confounded, so that it is very difficult to be certain as to the variety by the name given to it in different parts of the country. He states that the leading apple of the Volga is the Anis, which is highly prized and very largely grown. It seems to be capable of enduring a climate of 58° below zero, that in latitude 55 there are twelve villages, where the peasant proprietors engage entirely in apple growing, and that the product of these villages in a good season amounts to fifty thousand dollars. This is the coldest orchard region known, and the Anis is their hardiest tree. This Anis apple seems to comprise a number of varieties, one spoken of as the pink colored variety, another as the Blue Anis. The leading apple of the Russian Steppes is Antonovka. In the climate of Toul, latitude 54, some 480 miles further north than the city of Quebec, it is considered their hardiest apple as well as the most productive. It certainly is a most productive tree, sometimes yielding nearly half a ton of fruit.

But we have not space to mention all the names Mr. Gibb describes in his report. It is to be hoped that a number of them will be found adapted to our severe northern sections. He also found some varieties of pear sufficiently hardy to endure the climate of latitude 54 on the Volga, yet we are inclined to believe they are both small in size and of inferior quality as compared with the pears to which we are accustomed. He found cherries of a hardy variety that were grown in great abundance; that in the cherry districts of Vladimir there are many orchards comprising 15,000 trees each, and that entire trains of cars are sometimes loaded with the fruit and sent to the markets; that indeed the chief industry of this section is cherry culture. The trees are bush form, and when they become too old to bear profitably, the old parts are cut away and the sprouts allowed to take their places. When ripe the flesh of the cherry is a purplish red, the skin a reddish black, and the flavor a rich mingling of sweet and acid. Mr. Gibb sees no reason why these cherries may not be profitably grown in the Province of Quebec. He also found plums in central Russia, chiefly of the prune family. These plum trees, like the cherry, are very dwarfish in habit, more like bushes than trees. They are usually grown from suckers. From what we can gather, after examination of the report, we are inclined to believe that we may hope to find both apple and cherry in Russia that will be adapted to our colder parts of Canada, but that in pears and plums they have little to offer us.

THE FRUIT-GROWERS FRIEND.—We are in receipt of a little pamphlet of some thirty pages, by R. H. Haines, of Moorestown, N. J., which treats of the raising of fruits for pleasure or profit; about eight pages are devoted to the growing of strawberries, containing di-

rections for planting, distance for planting, cultivation, mulching, winter protection, picking, marketing. The remainder of the treatise is filled with similar information with regard to raspberries, blackberries, currants, gooseberries, grapes, and fruit trees. A large and practical amount of information is brought together in small compass, and we commend the work to the attention of our readers.

TRANSACTIONS OF THE INDIANA HORTICULTURAL SOCIETY FOR 1882.—We are indebted to Mr. W. H. Ragan for a copy of this report, which contains the proceedings of the 22nd annual meeting, together with the several reports made thereat, and the discussions thereon, all of which are interesting to those engaged in horticultural pursuits.

HINTS ON FRUIT CULTIVATION (by Chas. A. Green, fruit-grower, Rochester N. Y.) contains a handsome colored plate of the Jefferson Grape, and over thirty illustrations of fruits. It describes many valuable new fruits and directions how to plant and cultivate them. It is sent free to all applicants.

OUR OWN FIRESIDE.—Is the title of a family magazine published at Whitby, Ontario, at 25c. a year.

HOW TO SUCCEED WITH VERY SMALL SEEDS.—A correspondent of the *Gardeners' Monthly* says: "I find it a good plan to sow small seeds like begonia, etc., on a very soft brick, dug out enough to hold say one-quarter of an inch of soil. Place the brick in a pan of water. The brick draws moisture enough to keep the soil in a nice condition." To this the editor adds: "This is also a capital way to raise ferns, orchids and other fine seeds. Sown on a shallow brick, set in a pan of water, they will be almost sure to grow, the only care required being to see that the water is always kept in the pan. When done in the usual way, these fine seeds are sure to be washed away by the watering pot, no matter how carefully the watering is tended."

THE FLOWERS.

Spake full well, in language quaint and olden,
 One who dwelleth by the castled Rhine,
 When he called the flowers, so blue and golden,
 Stars that in earth's firmament do shine.

Stars they are, wherein we read our history,
 As astrologers and seers of old;
 Yet not wrapped about with awful mystery,
 Like the burning stars, which they beheld.

Wondrous truths, and manifold as wondrous,
 God hath written in those stars above;
 But not less in the bright flowerets under us,
 Stands the revelation of his love.

LONGFELLOW.

RECIPE FOR CORN BREAD.

Two cups Indian, one cup wheat,
 One cup sour milk, one cup sweet;
 One good egg that you will beat,
 Half a cup molasses, too,
 Half a cup sugar add thereto;
 With one spoon of butter, new,
 Salt and soda each a spoon;
 Mix up quickly and bake it soon;
 Then you'll have corn bread complete,
 Best of all corn bread you meet.
 It will make your boy's eyes shine,
 If he is like that boy of mine;
 If you have a dozen boys,
 To increase your household joys,
 Double then this rule I should,
 And you'll have two corn-cakes good.
 When you've nothing nice for tea,
 This the very thing will be;
 All the men that I have seen
 Say it is of all cakes, queen;
 Good enough for any king
 That a husband home can bring;
 Warming up the human stove,
 Cheering up the hearts you love;
 And only Tyndall can explain
 The links between corn bread and brain.
 Get a husband what he likes,
 And save a hundred household strikes.

LYDIA M. MILLARD.

DOMESTIC RECIPES.

STEWED POTATO.—Take potatoes boiled the day before; chop coarse and put on stove, covered with milk; put a plate over them and cook slowly; don't stir them; add a piece of butter and a little salt. Take off the plate and cook until they thicken.

MACARONI.—Boil until tender enough to put a fork through easily. Put in a deep dish a layer of macaroni, with a little melted butter and salt; grate cheese over this; fill up the dish as above, the last layer of cheese without butter. Pour over all milk so you can see it on the edge of the dish. Bake until a nice brown.

TOMATO SOUP.—One can tomatoes, one quart boiling water; put through a sieve; then put on the stove with a teaspoonful of soda, one pint of milk, a lump of butter; pepper and salt to taste. Let it simmer (not boil), and roll three or four crackers to thicken; very nice.

SALAD DRESSING.—One tablespoonful of flour, two raw eggs, one cup of water, one-half cup of vinegar, mustard, salt and pepper to taste. Beat the eggs well; mix the other ingredients, and stir into them. Warm them over a boiling kettle, adding a tablespoonful of butter. Stir constantly until it thickens and then cool quickly.

CREAM FRUIT-PIE.—Make a pie of fresh, canned or jam strawberries, raspberries or peaches. One cup new milk or cream; one-half teaspoonful corn starch, dissolved in a little cold milk; one tablespoonful of sugar; whites of two eggs, beaten to a stiff froth. Boil three minutes. When quite cold take top crust from pie, pour on the mixture, replace crust, sprinkle with powdered sugar, and set away to cool. Very nice.—*Rural Life*.

HORSERADISH.—The way to grow horseradish is from the little roots four or five inches in length. These will produce good radish fit for use in one season's growth. Plant the root small end down, and so that the top will be two inches under the soil. It can remain in the ground till very late in the autumn, and be pitted, or can remain in the ground until spring. It constantly increases, and there is danger that it will spread too fast and become troublesome.

THE POTATO.—The director of the Agricultural Experiment Station of the State of New York, gives the following as some of the results of the experiments made by him:—"So far as the experience of one year can determine, we feel warranted in asserting that all the data that we possess go to show that the character of the seed used is an important determining factor of the crop gained; that single eyes have yielded better results than whole potatoes used as seed, and that the form of the cutting seems more influential than the size of the cutting."



THE
Canadian Horticulturist.

VOL. VI.]

JULY, 1883.

[No. 7.

ROSE LA FRANCE.

The new strain of roses known as the Hybrid Teas is attracting a great deal of attention among our rose fanciers. We give a coloured illustration of one of this new strain, known as La France, in order that our readers may have a better opportunity of forming a correct estimate of their appearance. We are indebted to Mr. Henry Bennett, Stapleford, Eng., for this new strain, which bids fair to become one of the most popular of all our many different strains of roses. It was as recently as 1879 that he sent out his first group of seedlings which attracted much attention from their beauty of form, their rich perfume, and immense blooming capacities. This new group is produced by crossing the Tea Roses with what are known as the Hybrid Perpetuals, themselves crosses made with varieties of Provence, Damask and French roses upon Bengals, Bourbons, &c. This group of Hybrid Teas is as yet in its infancy, but enough has been done to shew that it is one giving great promise of permanent value. Of La France, Mr. H. B. Ellwanger says, in his valuable treatise entitled "The Rose," that it is the sweetest of all roses, and equal to any in richness of

perfume and profusion of bloom, and only needs to be known to be appreciated. The coloured plate gives our readers a very accurate representation of its colour, size and form, and will enable them to realize some idea of its exquisite beauty. This group will doubtless be more hardy than the Teas themselves, but is not likely to have the strength of constitution and ability to endure severe cold which most of the Hybrid Perpetuals possesses.

Our Canadian growers may plant them in the open border for the summer season, and when the frost begins to return take them up and place them under glass or keep them in a nearly dormant state in a cool cellar free or nearly so from frost. This strain of roses will also need to be well pruned in and bountifully fed to secure the finest specimens of bloom and best luxuriance of plant.

CANNING ORANGES.—By a process similar to that used for preserving other fruits, oranges have recently been successfully canned and shipped. The fruit is peeled and broken into its natural sections before canning, and when taken out is just ready for use. This is likely to become an important industry in the orange-growing districts of California and Florida.

NEW ORLEANS.

It seems but fitting in connection with the meeting of the Mississippi Valley Fruit Growers' Association, to give our readers some idea of the appearance of this city, and of its horticultural productions as they appear in the last days of the month of February. The thermometer during our stay ran up as high as 78° in the shade, and continued so warm during the night as to

make the room uncomfortable unless the windows were fully open and the fresh air allowed free entrance. Yet we found that sudden changes of temperature were by no means exceptional here, for within twenty-four hours the thermometer fell fully forty degrees, and we were awakened in the night by such a change in the temperature as required the closing of the windows and looking up of heavy blankets in order to



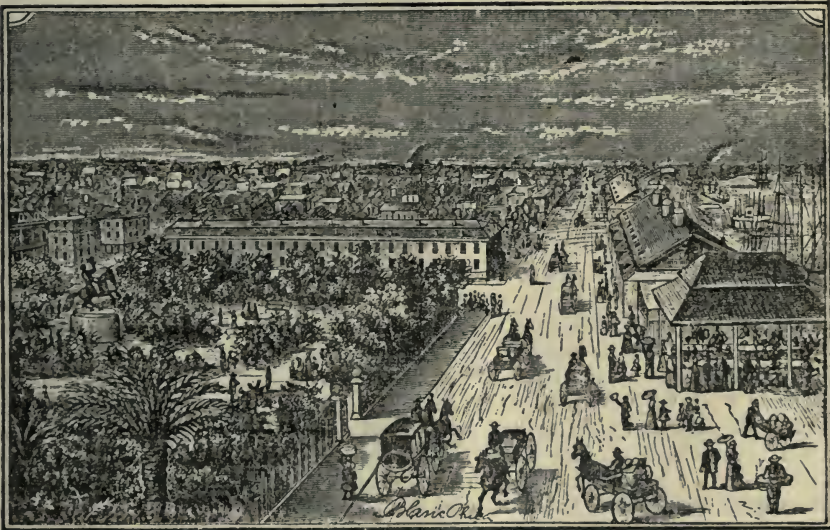
CARROLLTON GARDENS.

our physical comfort. Yesterday light clothes were almost a burden, to-day our woollen wraps and overcoats scarce make us comfortable when exposed to the chilling wind which prevails. Notwithstanding this, vegetation seems to come forward, and the fig trees are putting forth their leaves. The broad-leaved evergreen trees, which are very abundant here, give a summer-like appearance to the public squares and gardens which would look nearly as bare as our own without them. The Japanese plum trees, as they are called (the *Mespilus*), are now laden with fruit,

some of which is already ripe, and the trees of the bitter orange, which are planted for ornament in the public squares and on many of the streets, are loaded with golden fruit which contrasts beautifully with the dark green of the foliage. The accompanying engraving is a picture of the Carrollton gardens in New Orleans, in which will be seen specimens of palm, banana and yucca, from which our readers will at once perceive that the climate in its greatest severity must be mild indeed, compared with the frost which we experience. The avenue by which we

approached these gardens seems to be the favorite place of residence for the substantial business men of the city, which had more or less of lawn and garden attached; and it was to us a new sight indeed, to see Oleanders fully fifteen feet high, and Camellia Japonicas laden with flowers, Crape Myrtle, Pittisporum, Spanish Bayonet, and such like plants as can be grown here only in conservatories, flowering in the open

ground. Roses too, of the tender, ever-blooming kinds, which we shelter with so much care during the winter months, were here climbing over fences, trellis and walls in great profusion and laden with flowers. Marshal Neil seemed to be at home here, displaying its magnificent half open buds in size and abundance quite astonishing to us who have to train it under glass. There was one peculiarity that struck us as quite



JACKSON SQUARE.

novel in the structure of their cisterns for holding rain water. These were all above ground, from which we infer it is impossible for the people to have cellars beneath their houses. Indeed, at this time the city was below the level of the water in the river, so that if the banks of the Mississippi were to give way, at least the first story of the dwellings would be wholly submerged. We found too, on visiting the cemeteries, that instead of burying their dead beneath the surface of the ground, they built brick and stone vaults in long avenues, wherein the bodies of their

dead were deposited. One of the public squares of the city, near the famous French market, is known as Jackson square, and we were surprised to find the gardener trimming hedges of the evergreen Euonymus, which did not shew the least injury from the winter. Camellias were laden with bloom, the fragrant Olive mingled its odors with the opening flowers of the orange; the bananas were putting forth their new leaves, and the yucca aloefolia was in full bloom. Verbenas looked as though they had remained in the borders all winter, and the Alternanthera

had only been partly killed back by the cold weather. The accompanying cut of Jackson square, which gives also a birdseye view of the French market and part of the river, will illustrate the appearance of the city at this season of the year. In visiting the market we found little fruit besides oranges, lemons, bananas and Japanese plums; and very surprising it was to us to find that the oranges were either from Cuba or the Mediterranean. The vegetables were cabbage, lettuce, onions and garlic. The peas and beans could hardly be said to have arrived, a peck here and there being all we could find, with a few half grown carrots and beets. The meat market would bear but poor comparison with any meat stall in the smallest town in Canada. The beef seems to be coarse grained, thin and lean, with a dark bluish cast, anything but inviting to the palate of one accustomed to the use of Canadian beef. The fish market was more bountifully supplied with a considerable variety of fish, many of them new to us. On inquiring their names we found that they give the name of trout and pike and bass to fish very unlike those which are called by these names with us, while others, such as redsnappers, redfish and the like, were wholly new, both in name and appearance. Judging from our experience of the fish when brought upon the table, we would say that in richness of flavor, fineness of grain and firmness of flesh, they are not by any means equal to the fish of our Canadian waters; and even the oysters, of which so much has been said, lack the flavor of the oysters of Long Island Sound. This city seems to be growing in commercial importance. Ocean steamers lie at its wharves, taking in cargoes of cotton, rice and sugar, and discharging cargoes brought from foreign ports, and a general activity seems to prevade the whole city, which denotes business thrift. We had

not time to visit the manufactories of ice and sugar, for which the place is famous. On the whole the city presents many attractions to the Northerner for a sojourn during a part of our cold winter months; but for variety of horticultural productions in fruits and flowers, which contribute so much to home enjoyment, and for healthfulness of climate, this part of the world will hardly allure the Canadian from his northern home for more than a small period of the year.

MEETING OF THE MISSISSIPPI VALLEY HORTICULTURAL SOCIETY.

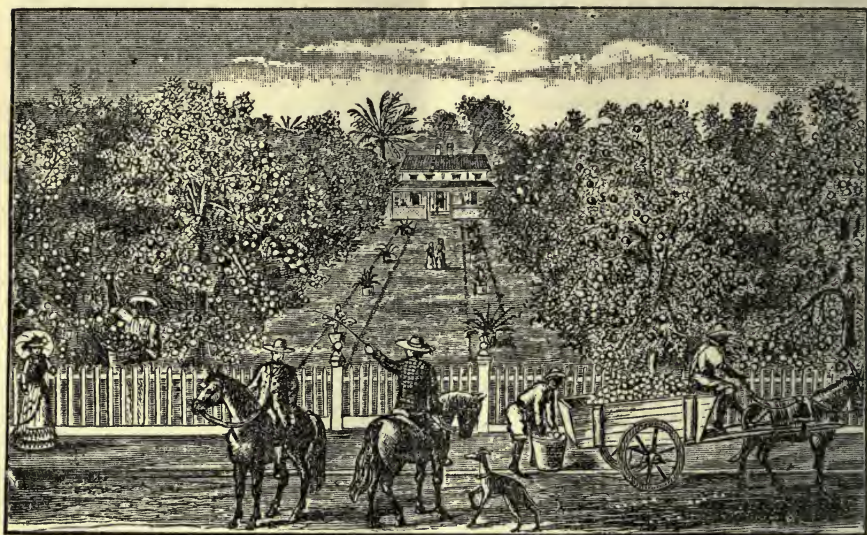
We called the attention of the members of our Association, at their winter meeting, to the proposed meeting of the Mississippi Valley Horticultural Society, to be held in the city of New Orleans, on 21st to 24th February last. The writer availed himself of the excursion rates offered of attending the meeting of this society, and proceeded, in company with the Vice-President of the Association, to attend the meeting, and gather up what information gave promise of being valuable in our more northern, and therefore more severe climate. It is to be remembered that the Mississippi Valley, extending to the city of New Orleans, with its June like weather in February, also includes the arctic climate of St. Paul's. We found on reaching the place of meeting that we were not the only persons coming from ice bound regions, but that there were representatives from yet higher latitudes than ours. The society met in Grunewald Hall, on Wednesday, the 21st February, where the members were gracefully welcomed by Mr. E. M. Hudson, Vice-President of the Fruit Growers' Association of the Gulf States; to which the President, Mr. Parker Earle, responded on behalf of the society. He stated that the horti-

cultural productions of the Mississippi Valley amounted in the aggregate to one hundred million dollars, and that this was in itself sufficient apology for such a gathering as was present there that evening. He stated that one of the principal needs of the fruit growers of that valley was some provision for testing in the field embraced within its boundaries the great multitude of new varieties of fruits that were continually being brought out, and new methods of cultivation. He was sure the fruit planters of the west had lost money, sometimes by planting unsuitable varieties, sometimes by unsuitable culture of varieties that would have succeeded had the treatment been adapted to their circumstances. The different climates of the Mississippi Valley called for diversity of treatment, and the planting of different varieties. What may be suitable in one place may be very unsuitable in another part of this great valley. The work of experimental stations undertaken by some of the States is certainly invaluable, but quite insufficient to produce the information needed by the planter. New questions are continually arising to perplex the fruit grower, new difficulties seem to be continually springing up, and new claimants for public favour have need to be tested continually. Hence the necessity for such a gathering as this, where practical fruit growers, giving their individual attention to the subject in hand, impart to each other the information they have gained and thus make the experience of each the common property of all. Alluding to Canada, he said that reciprocity with Canada in this branch of business was earnestly to be desired; that the duties imposed by Canada upon such products going into the Dominion were greatly to the disadvantage of the fruit growers of the Mississippi Valley. He closed his in-

teresting address by appealing to the members to do all in their power to make rural life attractive, and at the same time pecuniarily profitable, and to disabuse the young men of the notion that occupation of any kind in the city is to be preferred to agriculture or fruit growing. He also warned them not to plant one more shrub, tree or vine than they can intelligently care for, saying that already there had been too much "planting in ignorance and reaping in disgust."

On the following morning, the Gulf States Association invited the members to a steamboat excursion upon the Mississippi to the truck farm of Mr. A. W. Roundtree. This farm is upon the west bank of the river in Jefferson county, about thirteen miles from New Orleans, consisting of 175 acres, of which 75 are occupied by orange trees, to the number of 7,000 trees. It is probably the largest truck farm in America, making a specialty of cabbage, cucumber and tomato, during the winter months. The greatest part of the crop is sent to the Chicago market. He is growing this winter some 170,000 heads of cabbage upon a field of about 40 acres, and he yearly grows from eight to nine hundred barrels of cucumbers, and from six to eight hundred boxes of tomatoes. Besides this a considerable amount of strawberries, peaches and grapes are grown for family use, and his apiary produces annually from eight to ten barrels of honey. His tomatoes sometimes sell in the Chicago market at the rate of nine dollars a bushel, coming as they do at the time of great scarcity, when the demand far exceeds the supply.

At the time of the visit of the society the orange trees were just coming into bloom, filling the air with delightful fragrance. The fruit had all been gathered, save that which remained upon a few trees of the bitter orange, not fit for food,



MR. ROUNDTREE'S PLANTATION.

and only grown as an ornamental tree. The fruit of the orange is ripe in November and December, when it is gathered and packed as fast as the demand may require, usually completing the harvest in about a month. The first six months of the year are devoted to market gardening. The cabbage, tomato and cucumber plants are started under glass, and as the weather will permit, and the growth of the plants may require, they are transplanted into the open ground. The business of gathering, packing and marketing is carried on systematically with about twenty-five colored hands. By the 1st of July the ground crops are gathered and shipped, and the whole place sowed with cow peas to be turned under ground as a fertilizer. Mr. Roundtree said that from the first of July till first September, "we all take a holiday, going up and down the country hunting up recreation according to our several tastes." By the first of September the business of turning under

the cow peas begins and the ground is got in readiness for the winter crops. The accompanying engraving which we have copied from a picture we found, renders some idea of the appearance of Mr. Roundtree's place in the month of December, when the work of orange gathering is going on. The novelty of such operations being conducted at such a time is not without its charm to us who at that season are battling with frost and snow, amid leafless trees, whose fruits have long since been gathered.

DRIED APPLES.—Last year over three million pounds of dried apples were exported from the United States, to the markets of China, India, Egypt, Southern Africa, Australia, and also to England and Scotland. Four-fifths of this amount was exported from the port of New York. The exporters gather them up from all portions of the country, the best, it is said, coming from North Carolina. The cores and parings are shipped to France, where they are used in changing the flavors of various brands of wine.

ANOTHER STRAWBERRY ENEMY.

It appears that the strawberry growers of Illinois have had their strawberry crop injured by a very destructive insect. There was every prospect of a most abundant crop, when all at once it was found that as the berries were approaching their full size they were eaten by some insect that had appeared in countless numbers and had ruined the crop. We learn from the *Farmer and Fruit Grower* that Mr. Earle, President of the Mississippi Valley Fruit Grower's Association, has been a great sufferer, and will not be able to pick half a crop. He reports that his five acres of Sharpless will be totally destroyed, every berry having been sucked dry and rendered useless. He expected to gather not less than 15,000 cases of fruit from his strawberries this season, but now it will not amount to more than 5,000. Mr. W. W. Plater reports that his fields are entirely ruined, and that he has abandoned his crop. Almost every strawberry plantation in that section has been attacked by this insect, whose capacity for destruction seems to be wonderful. In consequence of the wholesale destruction of the strawberries in that part of Illinois, the great strawberry exhibition which was intended to be held, has been abandoned, as no longer possible. Professor Forbes, the State Entomologist, on being informed of this state of things, visited the scene of destruction in order to investigate the habits of this insect. He reports the injury done by all other insects that prey upon the strawberry, is not at all equal to the damage that has been done by this new invader. He states that it is a well known insect that has been common for many years, but never before known to injure the strawberry. He calls it the Tarnished Plant Bug, known to entomologists as *Lygus lineolaris*, an insect belonging

to the order Heteroptera, family Capsidæ, genus *Lygus*.

At its first appearance it is a small, green, flat-like bug, about the 16th of an inch long, increasing to about one-fourth of an inch and changing to dull, russet color, and finally becoming winged and able to fly when full grown. It is said that it prefers the Sharpless, and leaves the Crescent comparatively untouched. It is certainly strange that this insect should so suddenly turn its attention to feeding upon strawberries, and if once it gets a taste of this delicious fruit probably it will not soon relinquish its new found pasture fields. We may expect that if it abounds with us it will also be found preying upon the fruit of our strawberry plants, and it is well for us to be forewarned and forearmed. Our readers will find on referring to Wm. Saunders' work on insects injurious to fruits, page 147 (a book that ought to be in the possession of every fruit-grower), the following description and account of this insect as it affects our pear trees: "This insect is about one fifth of an inch long and varies in color from dull, dark brown to a greenish or dirty yellowish brown, the males being generally darker than the females. The head is yellowish, with three narrow reddish stripes; the beak or sucker is about one-third the length of the body, and when not in use is folded upon the breast. The thorax has a yellow margin, and several yellowish lines running lengthwise; behind the thorax is a yellow V-like mark, sometimes more or less indistinct. The wings are dusky brown, and the legs dull yellow. We are indebted to Mr. Saunders for the accompanying cut, which shows the full-grown insect. It passes the winter in a perfect state, taking shelter among rubbish, or in other convenient hiding places, and early in May, as soon as vegetation starts, it be-

gins its depredations. Concealing itself within the young leaves of the expanding buds of the pear, it punctures them about



LYGUS LINEOLARIS.

their base and along their edges, extracting their juices with its beak. The puncture of the insect seems to have a poisonous effect, and the result is to disfigure and sometimes entirely destroy the young leaves, causing them to blacken and wither. These insects are also partial to the unopened buds, piercing them from the outside, and sucking them nearly dry, when they also become withered and blackened. Sometimes a whole bunch will be thus affected, being first stunted, then withering, and finally dying. Early in the morning these plant bugs are in a sluggish condition, and may be found buried in the expanding leaves, but as the day advances and the temperature rises they become active, and when approached dodge quickly about from place to place, drop to the ground, or else take wing and fly away. In common with most true bugs they have, when handled, a most disagreeable odor. In the course of two or three weeks they disappear or cease to be sufficiently injurious to attract attention. It is stated that they deposit their eggs on the leaves, and that later in the season the old and young bugs may be found together. The young bugs are green, but in other respects do not differ from their parents, except in lacking wings. While they seem particularly partial to the pear, they attack also the young leaves of the quince, apple, plum and cherry, as well as those of herbaceous plants. Remedies.—First of all, clean culture, so as to leave no shelter for

the bug in which to winter over. When they appear in spring, shake them from the trees very early in the morning while they are in a torpid state and destroy them."

It is to be hoped that some more speedy method of destroying these insects, and one adapted to counteracting their ravages in this their newly-found field of destruction may be speedily discovered.

CLETHRA ALNIFOLIA.

The engraving which we give of this shrub will give our readers a better idea of the appearance of its flowers and the form of its flower spike and leaves than it is in our power to give by any verbal description. We call attention to it again, because it is extremely hardy, capable of enduring our winters with impunity, and because its season of bloom is so late as to make it very desirable on account of the scarcity of shrubs in bloom at that time, and its period of bloom is so protracted as to make it a very ornamental object on the lawn for several weeks. But it is more especially our bee-keepers to whom we desire to commend attention to this shrub. The honey it yields is of the finest quality, and is produced in great abundance, and that at a time when the flowers of spring and early summer are gone, when the bees have gathered their supplies from the basswood and white clover. This shrub affords them a bountiful supply during a period of the year when it is very difficult for them to obtain any. We believe it would be a very profitable investment for those who are interested in the production of honey to plant this shrub by the hundred or thousand in order to supplement the honey yielding plants that are to be found in this country. This shrub commences to bloom at an early age, can be trans-



CLETHRA ALNIFOLIA.

planted with great ease, flourishes in every soil, and seems to be quite free from the depredations of insect enemies. It certainly gives promise of being a most valuable acquisition to our list of honey-producing plants. We believe it can be procured from nurserymen at a reasonable rate and in large quantities.

ADOLPH STRAUCH.

Whoever has visited Spring Grove Cemetery—that beautiful triumph of skill in landscape gardening which is the pride of Cincinnati—will surely remember Adolph Strauch, whose genius conceived and whose skill perfected the beautiful pictures in trees and grassy slopes and lakelets which abound at Spring Grove. He was the presiding genius of this gem of rural beauty, and the conceptions of his mind here found embodiment in broad avenues, majestic trees, gleaming water stretches, and verdant lawns, so interwoven and blended that every turn brought to view some new picture of surpassing loveliness. To him America is indebted as the originator of the Landscape Lawn System for cemeteries, which he gradually developed, patiently overcoming the prejudices and customs which opposed his efforts, and at length demonstrating its great superiority, so that his rare taste and skill have been fully acknowledged by all, and his name stands, by common consent, by the side of the great masters of art in landscape creation.

It was the privilege of the writer not only to enjoy these creations of his masterly skill, but to grasp the hand and look in the face of the man whose brain had conceived this beautiful grove, and to find in him a spirit quite in harmony with the beauty with which he was surrounded. It was a pleasure to converse with him, and to

note how much he enjoyed the opportunity of contributing to the gratification of his visitors as they stood in mute contemplation of some charming prospect, or pointed out the effect of some skilful grouping. But he is gone, gone from the scenes he created, gone from the work in which he delighted. He sleeps in the most charming spot within the grove, the island, which the Directors had donated to him in recognition of his services. Spring Grove Cemetery is his monument.

THE CODLIN MOTH.

Some time ago a writer in the *Bruce Herald*, over the signature of *Pro Bono Publico*, said:

In 1878, when my apples and crabs were much injured, being desirous to make myself more fully acquainted with the habits of the Codlin Moth, I collected and opened several crabs which were injured by the larvæ of the moth. I took twelve of those and placed them in two crabs, then I burnt some earth in the stove till I knew all insect life was destroyed, then I damped it a little, and put about three inches of it into a glass jar. On the top of the earth in the jar I placed the crabs, in which I had put the larvæ, I then covered the jar with a piece of paper which I pierced with a pin. They soon left the crabs and went into the earth and were formed into chrysalis. They did not remain long in that state when they came out the full-grown moth. I then found they were very partial to water sweetened with honey. In 1879 I placed a gallon mustard jar in my orchard, in which I had some water sweetened with honey, in that I caught large numbers of them, and also many bee-moths. I found in that year my apples and crabs were not so much injured as they had previously been. In 1880 I placed jars so prepared again, and in two nights I caught about a hundred moths, so that very little of my fruit was injured, and all who saw my orchard were quite surprised to see what they called my fine fruit, and so free from the ravages of the moth. I expect next

year to completely exterminate the moths in my orchard.

Any vessel in which the honey and water is placed should be such as a gallon mustard jar, so that the moths could have easy access to the sweetened water, but could not easily get out, then the moths should be removed every two or three days, for if there are too many left in the water, others will light on them and be able to fly out. The moths only fly at night.

Those who have bees should be careful and remove the jars in the day, otherwise many bees will be lost.

I always in two or three days remove the moths with a piece of wire-cloth fastened to the end of a stick, and kill those which are alive.

I wish others would try this experiment and report to your paper.

It would be exceedingly interesting to hear again from this writer as to the results of his method of capturing these moths with sweetened water in 1881 and 1882, and to know whether he has completely exterminated them from his orchard as he expected.

Professor W. J. Beal, of the Michigan State Agricultural College, in a paper read by him before the Illinois State Horticultural Society, and published in the Transactions of 1882, says: "I have several times tried to catch them by placing in apple trees pans of sour milk, sweetened vinegar, bottles of sweetened water, and boards smeared over with molasses." I have always caught many insects, but never to my knowledge caught a codlin moth by these means. I have thrown slaked lime in trees at different times when fruit was on the trees, but it has failed to reduce the number of moths or of wormy apples. I have tried bands around the trees, bands made of straw, wood, cloth, pasteboard and soft paper. They all catch the larvæ of the moths, but still enough escape to keep up a good supply of insects. The most effectual band was one patented in Western New York. It consists of a

band of pasteboard two and a half inches wide and lined with cotton."

It seems from Prof. Beal's experiments that he did not succeed in capturing any of the codlin moths with sweetened water, sweetened vinegar or molasses; and it has been the general opinion of those who have studied the habits of the codlin moth, that it can not be caught with sweetened water. Wm. Saunders, in his work on insects injurious to fruits, says: "Wide-mouthed bottles, partly filled with sweetened water and hung in the trees, have been recommended as traps for the codlin moth, but there is no reliable evidence that any appreciable benefit has ever been derived from their use. There is no doubt that a large number of moths can be captured in this manner, but it is a rare thing to find a codlin moth among them. Neither is the plan of lighting fires in the orchard of much avail, since the codlin moth is rarely attracted by light."

Our Walkerton readers will confer a favor by calling the attention of the writer in the *Bruce Herald*, if he be known to them, to the subject of his experiments, and obtaining from him a further account of his experience.

THE VICTORIA CURRANT.—The Victoria currant is more prolific than the Red Dutch, and is therefore more profitable for market gardeners. But as the Victoria has more acidity, the Red Dutch is the better variety for farmers who intend to grow only for home use.

DIELYTRA **SPECTABILIS** is one of our prettiest spring blooming plants, also blooms nicely in the house in winter. A very light position should be secured for it, otherwise the branches will grow up wrong. Not too much heat is required for it: in fact, it will do better in rather cool places. It is pleasing to know of a plant that will do so well in the open ground, where one may be sure to enjoy its beautiful pink and curiously shaped flowers every spring.

CORRESPONDENCE.

CELERY.

There is no reason why the farmer should not raise celery in his garden, for since the introduction of the dwarf varieties, there is no more time or work required than is expended on the garden crop of onions. The "Sandringham" dwarf I esteem the best. If you are not in the habit of making a hot-bed, start your plants in the house in March in a small box of light red soil, such as you compost for house plants. It is well to have a barrel mixed in spring and kept in a shady place to decompose, ready for your house plants on removing them to winter quarters from the garden. Select place for your celery in garden, plant two rows of early potatoes in drills, rows four feet apart, after final hoeing run a tiller between the rows, sprinkle your fertilizer in the channel made by the tiller and hoe it in; it is better if a rain intervenes before you set out your plants; the planting is better done by two persons, one with a small dibble six inches long, acting also for a measure to distance plants six inches apart, making the holes and dropping in the plant. A person following with water fills the holes. After all are set out and the water soaked off, fill the hole with earth pressed slightly around the plant. At this time, last of July or first of August, the potato tops are large enough to afford shade, the plants need nothing more except to be kept free of weeds till your potatoes are dug, then hoe your celery and draw dirt towards it on each side. To blanch easily and rapidly go on your knees, astride the row; take a plant in one hand, shake it and squeeze it close to get out the earth from centre, holding in hand, with the other draw the earth up to the plant on that side, then take plant in other hand and draw earth on other side,

after which let go of the plant and draw earth from both sides, pressing it against the plant. After your row is gone over and blanched, finish up with a hoe; two blanchings is enough; a sprinkling of salt along the row has been found to advantage at time of blanching. To winter celery it should remain out as long as safe in fall, but should be dug when the soil is not wet. It should be dug with a long handle fork, a basket or barrowful at a time, and placed at once where you intend to winter it. I have tried sand, leaves, etc., for storing, but have found it to winter full better without either. Have bins made three feet wide with wide plank, with cellar floor for bottom. Take up celery with as much earth as possible and press the heads as closely as possible in the bin. After your plants are all in, place leaves at the end you intend to use from, banking up the celery on that side to exclude air after taking out for use. If you have been in the habit of buying you will find nothing you can raise in a garden would pay you better than your crop of celery. The space occupied is of little account, as you would plant your rows of potatoes only one foot closer than without. You can raise 300 heads, a fair home supply, easier than in former times one hundred of the Giant varieties could be raised in ditches.

W. M. P.

Clarenceville, Que., June 7th, 1883.

FOUNTAIN PUMP—REPLY TO MR. STRAUCHON.

MR. EDITOR,—In current month's number of *Horticulturist* there is an enquiry by Geo. Strauchon as to a good, cheap fountain pump for spraying fruit trees. I have used for the last two years the fountain pump manufactured by Josiah A. Whitman, Providence, Rhode Island, and find it an

exceedingly handy, portable and efficient article. It can be had, I think, duty and express charges paid, for about \$8. I have not yet tried it on the Codlin Moth, but think that with its help I have effectually checkmated the "little Turk." After three applications (one a week) of Paris Green water (one teaspoonful to a pail), my apricots are now as large as plums and not a mark upon them, and with close searching I have been able to find but two plums stung by the Curculio on the ten trees which constitute my plum orchard. In bye-gone seasons by this time plums and apricots were falling in perfect showers, notwithstanding daily jarring of the trees, and very few of either fruits eventually escaped. The exceptions then were indeed *rari nantes*. I might just add that I have found Mr. Whitman a straightforward and honorable man to deal with.

Yours, &c.,

C. R. MATTHEW.

St. Stephen's Parsonage,
Goderich Township, June 20, 1883.

FRUIT PROSPECTS.

(For the Horticulturist.)

Greenock, on the west coast of Scotland, is proverbial for the humidity of its climate. Of it, the story is told that sailors say it rains thirteen months in the year there. The little boy's answer to the question of a visitor who had frequently been there, and always found his umbrella in good place, Does it always rain here? was, "oo, no sir, it whiles snaws." Just such like has been our season here; St. Swithen left us weeping, and the clouds have wept ever since. Where we had a comparatively dry day, our expectations of coming dry weather generally vanished with the rising sun, and to-day, the middle of June, many farmers have only about half their spring work done, and badly done at that.

The prospects of the apple crop in our section are fair, if we are only spared from the Fungus, which is doubtful, as the disease has till now gone on increasing. The Fameuse and McIntosh Red were from this cause entirely worthless last year. I have tried the experiment of top grafting all my young trees of these varieties with scions of Canada Red, Wealthy, Mann apple, Canada Baldwin, American Golden Russet, Swayze Pomme Grise, and Nonpareil. All but the last named, (scions of which were sent me from the lower province and of which I know nothing,) succeed here, and if here you may class them as entirely hardy. Speaking of apples, there is a tree in my orchard planted I believe about the beginning of this century, the large proportions of which have been remarked by many. Six inches from the ground it measures round eight feet. It is a native, a good bearer, quality of fruit excellent for cooking, fair to eat, keeps well through the winter, has never spotted. I also top grafted from it.

I must thank friend Beadle, and in doing so, feel that I am but expressing what our Board of Directors feel, heartily thankful for the bound volumes of the *Horticulturist*, so well got up, and with so much modesty presented, that we think words would be wasted more than to say it's just like our editor. We must compliment him too for the goodly appearance and judicious selections of the *Horticulturist*. Always a welcome visitor, it is worthy of a first place on our shelves.

Friend Gott's remarks on the loss of our respected brother, Mr. Arnold, were well chosen. It takes but few words to tell a big tale of sorrow, and he found them.

Mr. Roy gives me credit for more enterprise in strawberry culture than I deserve. It's only a half acre patch

I'm going into, but I am testing varieties enough, I think, to make a future report interesting.

My main crop will be Early Canada, Wilson and New Dominion, but am testing Mount Vernon, Manchester, Bidwell, Forest Rose, Hudson Chief, Sharpless, Glendale. For these I have to thank Mr. A. M. Smith, of your place, and Mr. Henry Smith, of Morrisburg. In raspberries I am trying Niagara, Cuthbert and Hansell. The Philadelphia last year fruited well, when all my others were winter killed. I have trespassed too long on your sheet and your reader's patience.

JOHN CROIL.

Aultsville, June, 1883.

FRUIT REPORT FROM THE OTTAWA VALLEY.

The spring of 1883 has been the most backward that has occurred for many years in eastern Ontario. At this time of writing (6th June) the trees are hardly yet in full leaf, especially the black and gray walnuts. The wild red plums have just dropped their blossoms, but the blue plums, apples, crabs, strawberries and cherries are now in full bloom; the currants and gooseberries have set their fruit. Winter weather held on until late in the season and was succeeded by cold wet weather, in consequence of which vegetation was unusually late. Notwithstanding these drawbacks the shew for fruit is unusually good, but with so late a start it may be a question if the grapes, which are only shewing the fruit buds, will overtake their usual time of ripening. Present indications shew that it will take an exceptionally hot season, well extended into the autumn, to perfect the fruit before the frost sets in. Several pear trees which were sent out in past years by the Fruit Growers' Association, and had lingered on without producing any fruit, have at last succumbed

to the past severe winter. This proves conclusively to me that this is not a pear section. Almost the only variety that has fruited here is the Flemish beauty, but even this tree gave no return on my grounds, and in other localities has proved short lived, only fruiting for one or two years. Many varieties of cherries have been tried, but no success attended them. A few specimens have been secured from the Kentish, which so far has proved hardy, but does not bear so abundantly as in the west. The robins are so fond of this fruit that it is difficult to secure even those that come to maturity. Experiments have been made with the peach, but have only gone to shew that it cannot be grown in the open ground. I have tried it on the French Cordon system, covering the arms with leaves and soil, but without success. I have also tried the plan of cutting the roots of one side of the tree, throwing it over and burying it, but with no better success. All attempts to raise fruit have failed, though the life of the tree has in many instances been prolonged for several years. This, as in the case of the pears and the finer kinds of plums and cherries, shews that the fruit spurs, or that part of the tree which is productive of its seed, is the most tender, and the more readily attacked by cold, or more susceptible to the changes of temperature.

I find that raspberries do best with some slight protection. Probably the best thing to do is to weight the canes down with poles, light scantlings or sods, covering them with corn stalks, sorghum or some coarse material, probably cedar brush would be the best where it is easily obtained. Amongst the varieties experimented with here, I find the Cuthbert probably the most hardy, it shews every indication of being a valuable sort for cold localities. The berry is good in quality, firm and of a bright attractive color. All the

gooseberries are hardy, Smith's Improved appears to be taking the lead; it has the finest berry of the American varieties, bears well, and is comparatively free from mildew. A good desert gooseberry, free from disease, in all parts of Canada would be a decided acquisition. And this will no doubt be produced by our hybridists within the next few years, if it has not already been obtained.

What apple trees there are, shew abundant promise of fruit. The bloom was magnificent, and so far as can be judged they have set well. On the whole the fruit prospects in this district are the brightest that have opened for many years.

P. E. BUCKE,
Director Ottawa Division.

TO THE GROWERS OF FRUIT IN THE BLEAK NORTH.

We are told by the ancients that "the gods help those who help themselves." Would it not, therefore, be to our mutual advantage to unite and furnish to one another such information on the subject of fruit growing as we may have gleaned from time to time in our varied localities. I doubt not that you all have experienced the same difficulties that I have in securing fruits sufficiently hardy to withstand the intense cold of our northern clime. It seems to me, therefore, eminently desirable that we should every spring give a revised list in the *Horticulturist* of those trees, shrubs, &c., that have most effectually withstood the rigour of our northern blasts. In this way we shall soon be enabled to furnish a complete and reliable "fruit list" for the colder sections of our Dominion. Our southern neighbours are anxious and willing to give us the benefit of their varied experience, but, unfortunately, in many respects, it is not of such a nature as to be of very material service

to us. I shall therefore give you the benefit—if it can be called such—of my own experience, trusting that it may be the means of inducing others to "go and do likewise."

It is perhaps best to state briefly in the beginning, that I live in the county of Renfrew, in the Ottawa valley, in lat. $45^{\circ} 30'$; that I am entirely removed from the ameliorating influence of any body of water, and being besides situated at a high level have to withstand the effects of the most rigorous winters—the mercury some seasons ranging as low as 40° below zero.

Notwithstanding these natural disadvantages, I have succeeded in raising a considerable quantity of various kinds of fruit, and though they are not of the very best quality, yet sufficiently valuable to make it desirable to grow them.

I shall confine myself in this letter to the varieties of apples that I have succeeded in raising, and should it be deemed advisable will give a list of the other classes of fruits that I have found sufficiently hardy to warrant me in recommending them to others. I shall endeavour to enumerate them as nearly as possible in the order of their hardiness: Wealthy, Duchess of Oldenburg, Yellow Transparent, Tetofsky, Peach of Montreal, McIntosh Red, and Emperor Alexander.

The White Astrachan, Northfield Beauty, Magog and Red Streak, and Scott's Winter, although very hardy, do not appear to be quite so vigorous in the spring as those first mentioned. Last winter was a particularly severe one, yet all those mentioned above came through uninjured with me. I have several other promising sorts under trial, but not yet sufficiently tested to pronounce upon with certainty.

A. A. WRIGHT.

The Editor would urgently request Mr. Wright to continue his notes on

the several fruits and to extend them to ornamental trees, shrubs and plants, and roses as well.

ALUM WATER FOR THE CURRANT WORMS.

DEAR SIR,—In the *Canadian Horticulturist* you ask any one who tries the alum water on currant worms to report its effect. I have tried it and it works splendid, just as good as hellebore. I first used it on gooseberry bushes nearly full of worms, and after two applications scarcely a worm could be seen.

Your obedient servant,

D. H. WEBBER.

Hamilton, June 12th, 1883.

HOW APPLES ARE SOLD IN ENGLAND.

At a meeting of the Massachusetts Horticultural Society, Charles F. Curtis gave an account of the method of selling apples in England. This is wholly by auction. There are five auctioneers in the business at Liverpool, and all the apples received are sold by one of them. The sale is held in a large amphitheatre, in the centre of which is a large table, on which a barrel of each mark is poured out as a sample. Each auctioneer sells for three-quarters of an hour at a time, and the sales continue, if necessary, till ten o'clock at night. Apples are sold in lots of twenty barrels each. The understanding is that the apples shall be perfectly tight in the barrel; when such bring twenty-five shillings per barrel, "shakers," or those not tightly packed, will bring four shillings less. The next grade is "wet and wasted," which bring only half the price of the best. The Baldwin is the only variety sold to any amount; it is the only one which can be obtained in sufficient quantity to sell by the thousand barrels. Retail lots and odds and ends are not wanted. Sales are held three days in a week.

The trade dates from about ten years ago.

THE KIEFFER PEAR.

That this pear, which is producing such innovation in pear culture, is a veritable prodigy, no one will perhaps deny. Therefore, in order to do it justice, it seems necessary to look upon it calmly and criticise it philosophically. That it is not perfect, all should admit—no fruit has yet been produced that is—but that it possesses much merit, from a somewhat full experience with it, I am ready to assert.

With its large size, peculiar form and surpassing beauty, together with its remarkable growth, early bearing, and ornamental properties of the tree, it has so fascinated many, that they are blind to any defects, while some disappointed ones can see in it nothing to admire. Still others, charmed at "first sight," but chagrined at finding it "not quite so" sweet as appearances led them to suppose, can speak of it only slightly.

After growing the Kieffer, seeing it in several different places in New Jersey and Pennsylvania, and having tested it three consecutive years, I would describe it in brief as follows:

In size it is large to very large, of double turbinate form, rich yellow, with carmine cheek when exposed to the sun; showy and exceedingly handsome; an excellent shipping and keeping pear; flesh harsh-grained and of variable flavor; when well grown and well ripened, rich, juicy, peculiarly piquant and spicy, and when poorly grown or poorly ripened, lacking in character. Season, October to December. Tree, a marvel of rapid growth and early bearing, producing large annual crops, symmetrical, with large, glossy, dark-green foliage in abundance, rendering it decidedly ornamental. Were it of uni-

form good quality, little indeed beside could be desired in it as an autumn pear. Although occasionally a specimen of high quality can be found; in the hands of the masses, who would not, it is fair to suppose, treat it properly, it will be found of second or third class quality.

Finally, from its many properties of a high order of merit, and lacking, as it does, only uniform good quality—like the Concord grape, Wilson strawberry, Ben Davis apple and other varieties of extensively grown popular market fruits that might be enumerated, all of which are fully as poor in quality as the Kieffer—I am entirely satisfied it has not only come to stay, but is destined to become equally popular. I should have arrived at this conclusion from its market qualities, luxuriant growth and productiveness alone; but when I consider its superlative value for canning, surpassing all other varieties of pears—so desirable, indeed, for the purpose that the canning establishments alone will take all that can be produced for at least the next ten years, at highly profitable prices—I cannot perceive how it can prove otherwise.—J. T. LOVETT, in *American Garden*.

SOME MARKET PEARS.

The Bartlett has the greatest number of good qualities combined, including free and handsome growth, early bearing, fair fruit, sound cores, great productiveness and special adaptedness to canning; and it is not surprising that it has stood at the head of the list for wide popularity for the past twenty years. Next to this, perhaps, is the later Beurre d'Anjou, which also has an unusual combination of good qualities. Its uniform and moderate bearing contribute to the full development of the fruit, and it is not common to find a small and poor specimen. The hand-

some form and good size are combined with an excellent flavor; and it possesses in an unusual degree the quality of keeping a long time after becoming ripe. The earliest specimens ripen in October, but there is no difficulty in keeping the later ones till January if in a quite cool room. Some orchardists would place the Seckel next, and where soil and treatment have been right, it has proved very profitable. Its freedom from blight and its reliability as a constant bearer, are qualities of great importance.

There are some other sorts which may become more popular as market pears in future, when better known to purchasers. Clapp's Favorite is the handsomest large early pear. Doyenne Boussock has some excellent qualities. The tree is a fine, healthy grower, both as a standard and dwarf, and the fruit is always remarkably fair. In quality it is about equal to the Bartlett. But from some cause it has never found its way largely into market, and brings but a moderate price. The Howell is a vigorous grower and prodigious bearer, and the fruit is unusually fair. Most judges place it as quite equal to the Bartlett in flavor, but it does not sell so well. It will probably be better esteemed in future years. The Buffum is perhaps the finest of all growers and the greatest of all bearers, but the fruit is too small and not good enough. It may, however, sell well in some markets, and if at only half price, an acre of orchard would bring good returns. Some orchardists place the Claireau as the most profitable late pear. A dish of selected specimens makes the finest show of all the sorts on the table. A loaded tree in autumn, with its large, ruddy, brilliant pears, is the most showy sight among pear trees. The quality is sometimes pretty good, but O. B. Hadwen, of Worcester, says he doubts whether any connoisseur in pears can be found who ever ate a whole Claireau,

and that it is preferred by restaurant and hotel keepers to Anjou because it lasts longer on the table.

Among dwarfs, Duchesse d'Angouleme stands high above all others for profit, the hardiness and fine growth of the tree, and the large and showy fruit, being its special recommendations. Its remarkable freedom from blight admits copious manuring, so essential to the best growth of nearly all fruits.—*Country Gentleman*.

DRIED FRUIT.

The *Grocers' Bulletin*, of Chicago, says:—A few years ago the amount of dried fruit shipped from the south was scarcely worthy of note, but since then the business has reached very considerable proportions. The south has an almost undeveloped mine of wealth in the production of fruit, especially for canning and drying purposes. For the production of peaches, plums, grapes, early apples, and all the fruits, the climate is unsurpassed, and yet less fruit by far is consumed each year per family, whether in its fresh state or canned or dried, than at the North, where it is produced under far less favorable conditions. The States bordering the Ohio valley on the south, and including Arkansas, ought to become as noted for their fruit crops as the country bordering the Delaware and Chesapeake bays. Attention is being turned in that direction, and each year now sees a larger supply coming from the south to the northern markets, giving a good promise for the future in this line of production. Our first of the season's supply of small fruits in the Chicago market now comes from the Gulf States, the shipping points receding north as the season advances, giving us berries, peaches and apples weeks before the crops of southern Illinois—on which only a few years

ago we mainly relied—are ready for market. But the business is yet only in its infancy, and the capabilities of the country in the way of production hardly tested. The demand for fruits in all forms is steadily increasing, and there is little danger of over-production if the products are put into a non-perishable condition by canning or drying.

TRANSPLANTING QUINCE TREES.

W. W. MEECH, so well qualified to advise in such matters, gives the following directions in the *June American Agriculturist* for handling quince trees:

The distance apart to plant quince trees depends on circumstances and surroundings, and the form it is intended to give the head of the tree. Six, eight, ten, and twelve feet apart in the rows have been recommended. My oldest trees are eight feet apart, and have done very well; but that is too close to admit of any but hand-culture. I next planted ten feet apart; but that is also too close. I have widened the distance between the trees of successive plantings, until I now set them fifteen feet apart. As generally grown, from twelve to fifteen feet will be found to give sufficient room. The largest quince tree on record was standing near Geneva, New York, about thirty years ago; it was thirty feet high, had a trunk six feet around; with a branching head seventy-five feet in circumference. An orchard of such trees would need at least twenty-five feet between them. How old this tree was I could not learn, but there are two quince trees on the farm where I was born, which are more than fifty years old, and still bear a little.

The location of each tree being fixed, dig the hole. This should never be less than three feet across, however small the tree may be. It should always be wider than the roots extend each way,

the wider the better; and unless the subsoil is clayey enough to hold the water, it is well to dig at least a foot and a half deep. I usually dig two spades deep, heaping up the soil on the sides of the hole, and throwing the subsoil around on the surface. I then return a portion of the soil to the hole, on which the tree is set, and a wheelbarrow of richer earth is filled in among the roots, as the rest of the soil on the margin of the hole is returned. I get this richer earth generally by taking two or three inches of soil from my poultry yard. When the hole is nearly full I put around the trees a good mulch of leaves, refuse straw, or any similar material, and lightly cover this with earth to hold it in place. This will protect trees from drouth better than watering will, and help to maintain an equable temperature of soil. It will also become a good fertilizer.

ENSILAGE.

The results of some experiments with ensilage made at the New York State Experimental Station, are thus summed up:

Our conclusions in regard to ensilage, as derived from this one experiment, must be considered both favorable and unfavorable to its claims. When it is the sole food it seems a food favorable toward maintenance, unfavorable to the production of milk, unfavorable toward the total production of butter, but favorable for the recovery of the butter represented by the fat of the milk. We may infer from reasoning, that the mixture with other foods may tend to obviate, in a certain degree, the unfavorable indications. Its effect upon the general appearance and health of the cow when fed in excess, seems detrimental to a slight degree, but when fed as an addition to other foods, the effect, so far as we can reason, would

seem to be favorable.—E. LEWIS STURTEVANT, *Director*.

PRESERVING PEAS.

The most effectual method we have found for preserving peas from withering or drying up in a drouth, is to mulch them thickly with coarse hay or straw, to a width of at least two feet on each side of the row. Our garden soil is a fine, porous gravel, and unless the season is cool and moist, the pea vines dry up so badly as to produce little fruit. Mulching heavily is consequently a necessity in order to save them. By doing this, we have obtained as good crops as when May, June, and July were cool and rather rainy. It is not necessary to bush dwarf peas. Still, when exposed to a strong wind, they will sometimes blow down, and then the further advantage of their being mulched is that the pods are kept clean and dry, and escape being mildewed. It is an excellent thing also to mulch both pole and bush beans, melons, squashes and cucumbers in the same way.—*American Agriculturist for June*.

RIPENING GRAPES.

Josiah Hoopes says in the *New York Tribune*: "No surer evidence of the impropriety of defoliation to admit the sun's rays can be cited than the results of recent experiments in bagging grapes. We see that the covered clusters ripen more thoroughly, color more beautifully, and assume that flavor which, without artificial aid, in many sections they rarely attain. The foliage in a great measure acts as the lungs do in the animal creation, and every perfect, healthy leaf taken off a plant destroys a portion at least of its power of subsistence, for vegetation extracts from the air a wonderful amount of nutriment, which enters into its organization through the myriads of minute

apertures which nature has so wisely ordained for the express purpose. Then why partially cut off its means of supply to gratify the whim that fruit must receive the direct rays of the sun?

BOOK NOTICES.

TRANSACTIONS OF THE MISSISSIPPI VALLEY HORTICULTURAL SOCIETY.—This forthcoming volume, advance sheets of which have been kindly furnished, will prove one of the most valuable horticultural publications that has ever been given to the American public. It will not only contain reports of the sayings and doings of the society at its meeting in the city of New Orleans, in February last, but will also contain in full the many valuable papers which were read before that meeting. We desire to call attention to the very valuable paper by Professor S. A. Forbes, State Entomologist of Illinois, devoted to the insects injurious to the strawberry, which treats not only of those which are troublesome in the Mississippi Valley, but also of all the insects known to be injurious to that plant. He considers the strawberry worm, *Emphytus maculatus*, one of the most destructive enemies in localities where it has secured a footing, but not as widespread as the leaf roller and some of the various beetle larvæ which injure the root and the crown. He speaks of it as occurring in great numbers through central and northern Illinois, Missouri and Iowa, and reaching as far east as Ontario, Canada. The remedies which he recommends are Paris green or powdered hellebore. The strawberry leaf roller, *Anchylopera fragariæ*, he mentions as another of the most destructive insects of the strawberry, which at one time threatened to put an end to its culture over very large areas, and probably would have done so, at least for a considerable time, if

successful remedies had not been discovered. These were mowing the field after the strawberries had been picked, and burning it over when the leaves have become dry. This process does not hurt the plants, and checks the leaf roller at once, so that in two or three years its depredations become insignificant, if indeed the insect is not wholly exterminated. He also mentions the flea negro bug, *Thyreocori sulicarius*, as sometimes very injurious to the strawberry, puncturing the stem with its beak and sucking the sap, thereby causing the blossom to wither. The strawberry crown miner, *Anarsia lineatella*, seems to be a recent invader of the strawberry, shewing both the ability and disposition to do serious mischief. He discovered it last September by the roadside in plants which had escaped from cultivation, about 75 per cent. of which were infested with this caterpillar, which had eaten out the interior of the crown, in a manner similar to the crown borer of Illinois, and equally serious. This caterpillar is about two-fifths of an inch long, reddish pink on the back, fading to dull yellow on the second and third segments; the head is yellow and each segment has a few shining redish dots arranged in imperfect rows. He says that Mr. Wm. Saunders, of London, Ont., is to be credited with the first public mention of their injuries to this plant. The strawberry crown borer, *Tyloderma fragariæ*, he says, has been known as one of the worst enemies of the strawberry for more than fifteen years. It is a shy, sluggish insect, rarely seen outside of its burrow, and incapable of flight. He is not aware that this insect has been found injurious except in Illinois and Missouri. The only method of subduing it seems to be one as destructive to the plants as to the insect, namely, ploughing up the strawberry field. Enough has been said to show the

practical value of this paper, which was followed by another, upon "The best strawberries for home use and for market," by E. D. Webb, Kentucky, who said that under the head of strawberries for distant markets, he could name only the Wilson and Glendale, remarking that the Wilson has now outranked all others as a shipper, proving more nearly a success, and now more grown for commercial purposes than any other variety. The paper by F. P. Baker, upon "irrigation in horticulture," will be found exceedingly interesting and well worthy the careful perusal of every one living in a climate subject to summer drought. Another very interesting paper was read by T. T. Lyon, Michigan; the subject was "ruts in horticulture." We have not space for a synopsis of this valuable paper. We advise our friends to send \$2.00 to the Secretary, Mr. Wm. Ragan, Clayton, Indiana, and secure a copy of the transactions and study this paper for themselves. Gov. Furnas, of Nebraska, furnished a very interesting paper upon "tree planting on the plains," which contains much information concerning the growth of timber and the value of nearly all of our forest trees for various uses and commercial purposes. Dr. Jno. A. Warder, Ohio, furnished a valuable paper on "the effect of forests upon health," shewing the importance of trees as a safeguard against malaria. The paper upon "marketing of fruit," by E. Hollister, Illinois, is replete with valuable information to everyone engaged in the packing and shipping of berries and other small fruits. Mrs. H. M. Lewis, Wisconsin, furnished a paper on "birds in horticulture," and she says that if Dame Fashion would declare that the English sparrow was the coming bird for ladies' headwear and parlour decoration, as the sunflower has been of late, it would be a boon to the coun-

try. The paper upon "the adornment of rural homes," by Mrs. Huntley, Wisconsin, is not only beautifully written, but full of information, derived evidently from her own experience, that cannot fail to be of interest to us, whose climate so closely resembles that of her own home. The Secretary, Mr. W. H. Ragan, of Indiana, contributed a paper upon the question, "Can we master the insect enemies of the orchard?" in which he seems to give way to the fear that through want of concert of action among orchardists, the insects are likely to have their own way. We commend this subject to the attention of our Ontario orchardists, for truly if our efforts are either spasmodic or isolated, we shall not be able to cope successfully with the insects which have invaded our orchards, and which rapidly render our marketable fruits small by degrees and beautifully less. The paper upon "the management of peach orchards," by G. W. Endicott, Illinois, treating on the varieties to plant, of pruning, gathering of the fruit, etc., will be exceedingly interesting to those of our readers who live within the peach growing regions. The paper on "grape growing and civilization," by Isidor Bush, Missouri, will be of interest to our grape growers, being, however, suggestive rather than practical. We commend to our hybridists the paper by Dr. J. Stayman, of Kansas, "on the scientific production of new fruits," which will be found replete with suggestions bearing upon their success well worthy of their attention. But there is not space to enumerate a tithe of these interesting papers. Enough has been said, we trust, to shew the great value of this volume of transactions, not merely to the members of the society by which it is published, but also to our Canadian fruit growers. The mechanical workmanship displayed in the publishing of this report is of

the very best in every respect, and we trust many of our readers will procure it and find its perusal both interesting and profitable.

ORNAMENTAL AND TIMBER TREES NOT NATIVE OF THE PROVINCE OF QUEBEC. By Chas. Gibb, Esq., Abbotsford.—Mr. Gibb has been at great pains, not only to introduce hardy fruits into the Province of Quebec, but also such ornamental and forest trees as are likely to prove valuable in that province. This little pamphlet of nearly eighty pages is full of information of great value, not only to the Province of Quebec, but also to those in the Province of Ontario who live in the colder latitudes. We note that he desires particularly to call attention to the Russian mulberry. He says it has been introduced into Minnesota, at latitude 54, where it has succeeded perfectly. It begins to bear fruit at two years old, that the fruit is valuable, and is produced in large quantities, that the timber is good for building purposes, and lasts a long time when made into fence posts or railway ties, and its leaves are the best food in the world for silk worms. We commend this pamphlet to the careful perusal of all who are interested in the growth of forest and ornamental trees in the northern portions of Ontario.

THE PRIZE LIST OF THE INDUSTRIAL EXHIBITION of Toronto has just come to hand, from which we learn that the Exhibition is to take place from the 11th to the 22nd of September next. The grounds and buildings will be open to the public on Tuesday, the 11th Sept., at 9 o'clock a.m., and continued open each day from 9 o'clock a.m. until 10 o'clock p.m., up to the evening of Friday, the 31st September. The show of agricultural and dairy products, fruit, cut-flowers and vegetables, will take place the second week, during which every branch of the exhibition will be

in full operation. During the first week railway tickets, good to return any day up to close of exhibition, will be issued for a fare and a third, and on the second week return tickets will be issued at single fare, good to return up to the close. Admission for adults, or two children under twelve, twenty-five cents. Copy of prize list and entry form can be had on application to H. J. Hill, secretary, Toronto.

TRANSACTIONS OF THE MASSACHUSETTS HORTICULTURAL SOCIETY FOR 1882.—We are indebted to R. H. Manning, Esq., the Secretary, for the second report of these transactions. The Massachusetts Horticultural Society is one of the oldest on the Continent, and its transactions are always filled with valuable information. We have already given our readers some of the discussions relating to vegetables, and shall, as opportunity offers, lay before them such portions of these proceedings as seem to us most likely to be of service in our climate.

TRANSACTIONS OF THE ILLINOIS STATE HORTICULTURAL SOCIETY FOR THE YEAR 1882.—This valuable report contains some very interesting papers which were read before the society, particularly those upon "Some Vegetable Poisons," "Ornithology as Related to Entomology," "Raspberries and Blackberries," "Vegetable Gardening," "Gathering and Marketing Fruits and Vegetables," "Experiments in Horticulture," and "Trees for the Park, Avenue and Street." It is well worthy of careful study.

THE CANE JOURNAL is a monthly publication devoted to the growth and manufacture of the sugar cane, published in Clinton, Ont., at fifty cents per year, of which Mr. S. J. Andrews is the editor. As its title indicates, it is filled with information relating to the growing of the sugar cane in this

country, and the manufacture of it into syrup and sugar. It will be found of great value to those who feel interested in experimenting in the production of syrup and sugar from sorghum.

TWELFTH ANNUAL REPORT OF THE STATE HORTICULTURAL SOCIETY OF MICHIGAN, 1882.—This is one of the most important of the reports which we receive. This year it is a volume of over four hundred pages, full of practical matter of great value, ably edited by the secretary, Chas. W. Garfield. Some half dozen copies are for distribution to those of our members who apply for them to the editor of the *Can. Horticulturist*.

AGRICULTURAL RETURN OF THE BUREAU OF INDUSTRY FOR MAY, 1883.—This is a digest of the reports received at the Bureau regarding the present appearance of the crops of fall wheat, winter rye and clover, and gives information regarding the surplus of last year's crop still in the farmers hands, the condition of live stock, of fruit trees, and progress of spring work.

PROCEEDINGS OF THE GRIMSBY FRUIT GROWERS' ASSOCIATION.—This pamphlet of sixteen pages contains the papers read at the meeting of this Association, with the discussions thereon; it gives the experience of the members with apple, pear, plum, peach, and small fruits.

THE GRASSES OF TENNESSEE. By J. B. Killbrew, M.A.—This is a pamphlet of about one hundred and forty pages, replete with information upon meadow grasses, pasture grasses, and the management of meadows in the State of Tennessee.

THE ACADIAN SCIENTIST, Edited by E. J. Pineo, Wolfhill, Nova Scotia, is published in the interest of the Acadian Science Club, at thirty-five cents per annum. As its name indicates, it is devoted chiefly to Botany and Zoology.

THE BIOGRAPHER is published at 23 Park Row, New York. Devoted to short mention of the leading men of the present day, together with their likeness taken from photographs. Subscription \$2 50 per year.

THE BRIGHTON GRAPE.

At the meeting of the Western New York Horticultural Society, the Brighton grape received high commendation. Vines set at Fredonia have proved so profitable that 20,000 more of this sort will be set this spring. It is said to be a week earlier than the Concord and equal to the Catawba in quality. Its great fault is a tendency to overbear, which renders the fruit insipid, which accounts for the unfavorable reports from some places.—*Michigan Farmer*.

The Editor of the *Canadian Horticulturist* has not found the Brighton equal to the Catawba as grown on the Lake Erie Islands, but it is an excellent grape, ripening a little earlier than Concord, and much superior in quality. It should be used when ripe, as it loses instead of gaining in quality by hanging long on the vine after it is ripe. This variety succeeds well at Trenton.

APRICOT-GROWING IN CALIFORNIA.

The *Wine and Fruit Grower* says:—We learn from the Marysville *Appeal*, that apricot orchards are the rage in its immediate section. The last season, trees three years old paid ten dollars to the tree. The *Appeal* adds its testimony to the fact that there is not the slightest danger of overdoing the business, as the canneries can handle all the fruit that can be produced. It is stated that some of the farmers in the vicinity of Berryessa, located on what they have recently learned to call apricot lands, are preparing to engage extensively in fruit culture. Thousands of apricot trees are to be set out on lands heretofore "wasted" on grain culture.

MARCH WIND.

A squirrel heard against his door
The noisy March wind tap;
He scanned the whitened woodland o'er,
And chattered: "Dears,
I've many fears;
We'll take another nap."

A tiny spear of grass peeped out
And heard the wind so shrill;
It paused a while, in fear and doubt,
Then seemed to say:
"I'll go away
Till skies are not so chill."

A little bird, all pinched with cold,
Sat muffled in a tree;
It tried to sing, its heart was bold,
And feebly cheeped,
"The snow is heaped;
Sad weather this for me."

A pretty rill crept from the ice,
To tinkle down the hill;
It glanced in sunshine warm and nice,
Then quiet grew,
Ah! well it knew
The frost would linger still.

A Snowdrop looked up at the sky,
With baby face so dear!
It thrived, though sleet and wind went by,
And smiled: "I'll stay,
Please, if I may,
Some weary heart to cheer!"

—Independent.

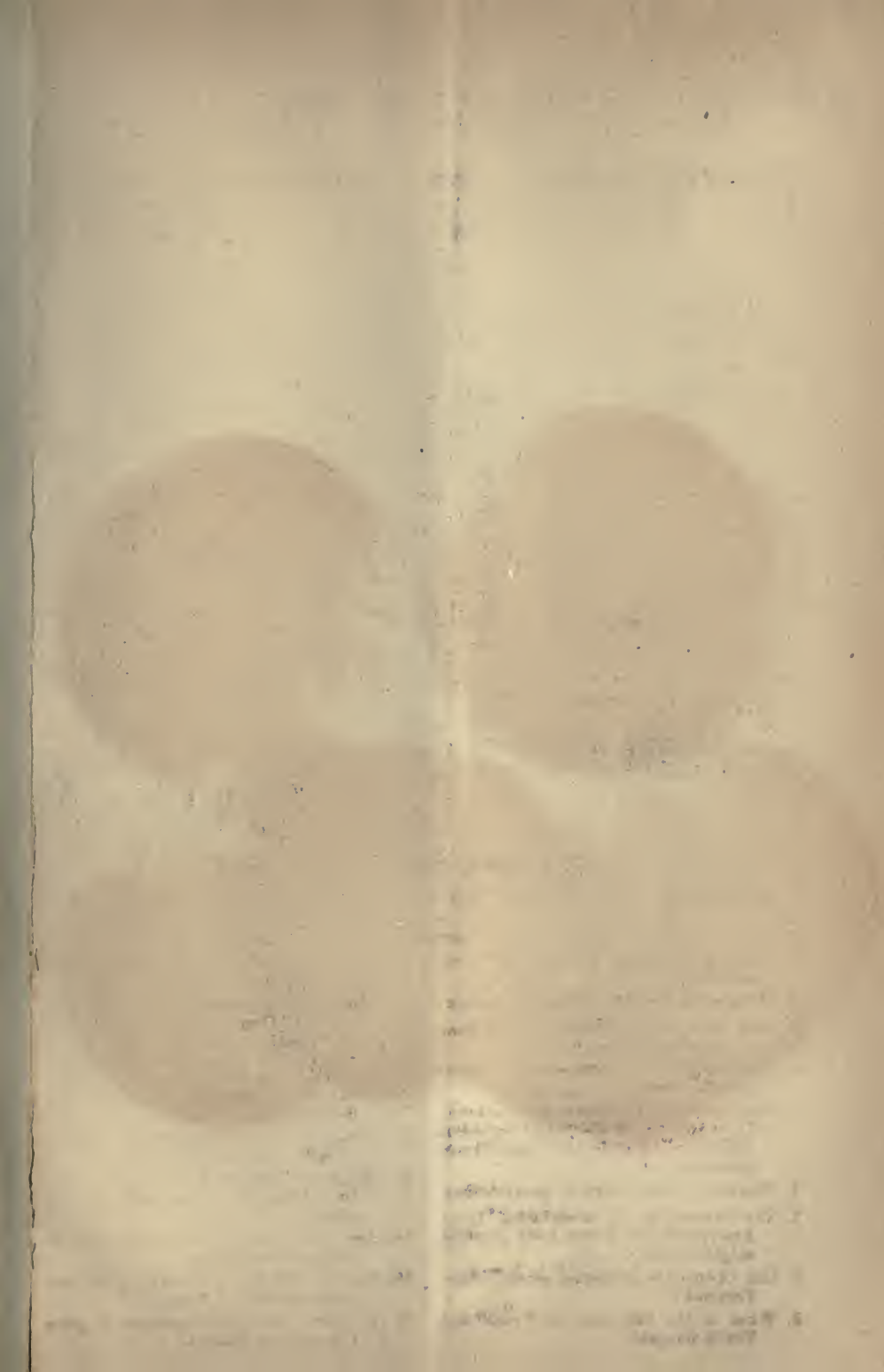
THE APPLE TRADE.—The exports of apples from the United States and Canada from 1882-3 were 365,107 barrels. A larger quantity could have been absorbed by the foreign demand but for the scarcity in the home markets.

DRIED APPLES.—Last year over three million pounds of dried apples were exported from the United States to the markets of China, India, Egypt, Southern Africa, Australia, and also to England and Scotland. Four-fifths of this amount was exported from the port of New York. The exporters gather them up from all portions of the country, the best, it is said, coming from North Carolina. The cores and parings are shipped to France, where they are used in changing the flavors of various brands of wine.

ASPARAGUS CULTURE.—How is it that most writers on asparagus culture recommend planting about a foot apart in the rows? I think this is a mistake; the best shoots can be obtained only by giving plenty of room to the plants; four feet between the rows and three feet in the rows is near enough. Crowd the plants

and Conover's Colossal or any other giant asparagus cannot be produced, let the other treatment be ever so liberal. On the other hand give plenty of room and plenty of manure in good sandy loam, and giant shoots are produced every time. The roots require plenty of room to ramify in before large, well developed crowns can be secured, without which strong shoots cannot grow. When selecting asparagus roots to force, I always used to select the strongest and best ripened crowns I could get; unless such were brought into heat good shoots could not be produced. Like the strawberry, this year's treatment is what forms the crops for next season, and if this is not attended to poor results may be expected the following season. Asparagus beds are often destroyed by not allowing enough of foliage to mature the crowns for producing next season's crops. M. MILTON. Mahoning Co., O.—*Country Gentleman*.

THE SWITZER APPLE.—The Switzer is one of the apples imported from Russia by the United States Department of Agriculture in 1869-70. The tree is a vigorous grower, upright and spreading, and an early and abundant bearer. The young shoots are dark brown (black walnut color) with not many, but very distinct white dots. Fruit medium to large, very smooth and fair, roundish-conical. Skin almost covered with bright, broad splashes of different shades of crimson, somewhat after the style of the St. Lawrence, but not so dark. No bloom. Stalk medium in size and length, rather deeply inserted. Calyx partially closed, in a shallow, smooth basin. Flesh white, soft, juicy, and of remarkably fine, rich flavor for a Russian apple. Very good to best. Ripens in Northern Vermont from first to middle of September, or with Red Astrachan, but much more simultaneously. In quality it is the best of the Russian early sorts, being far better for eating uncooked than Red Astrachan, quite as beautiful, equal in size, and of about the same season. It will push the Red Astrachan hard as a market apple if introduced to general cultivation. The tree is considerably hardier than Astrachan, and bears very much younger. T. H. H.—*Rural New Yorker*.





JAMES VICK.

The finest of all the new varieties. The berries are large and handsome. The most prolific known, (280 berries picked from one plant), 12 to 18 berries on one stem. W. C. Barry says: "of all the new Strawberries I have tested, this is the most productive."

"PRINTED FOR THE CANADIAN HORTICULTURIST."

THE
Canadian Horticulturist.

VOL. VI.]

AUGUST, 1883.

[No. 8.

JAMES VICK STRAWBERRY.

So much has been said concerning the wonderful productiveness of this new variety that we herewith present our readers with a colored illustration, which is said to be a very truthful representation, and submit for their consideration such information regarding it as we have been able to gather. Our own plantation of it is quite too young to be any test of its merits. That the plants thus far are very healthy and vigorous, is about all that can be said.

The writer received a very urgent invitation from Mr. Green to visit his grounds, where, he says, it has proved to be the most productive of all the varieties that he has in cultivation. It began to ripen with him on the 25th of June, but the fruit was all suffered to remain on the vines, and on the eleventh of July he wrote that the fruit still hangs on the vines in condition to be eaten, and that he is sure it will remain on the vines longer without loss than any other variety. This certainly is a very important quality, enabling the grower to wait a few days longer than he can with other varieties, if there should be an over supply in the market, before gathering and shipping his fruit.

As to quality, Mr. Green states that last year he thought the Manchester superior to the James Vick, but that this year the quality of the latter is far ahead of that of the Manchester. Yet he does not claim the highest quality for either of these sorts.

Mr. Green's old bed of this variety was dug over for plants, yet he says that it produced as fine and nearly as many berries as his specimen bed, and that he counted one hundred and two hundred blossoms on single plants.

Mr. J. T. Lovett says that the Vick has surpassed his expectations, and that it is of great value for market purposes.

Strawberry growers have been long looking for a variety that will excel the Wilson as a market berry, but hitherto none have been able to supplant it for that purpose. This new aspirant for fame as a market berry must be grown for many years and in many localities before its ability to rival, not to say supplant, the Wilson can be affirmed. Meanwhile growers for market would do well to give the James Vick a trial, and report their opinion of it through the columns of the *Canadian Horticulturist*.

In the *Fruit Recorder* for July we

find the following mention, "James Vick yield a very heavy crop, but a large proportion of the fruit is very small, which will be against it, we fear, as a market sort; still it may do better next year."

MEETING OF THE MISSISSIPPI VALLEY HORTICULTURAL SOCIETY.

(Continued from page 150.)

After the visit of the Society to Mr. Roundtree's plantation, the afternoon of Thursday, February 22nd, was spent in listening to papers upon the strawberry and discussion thereon. The first paper was read by the Hon. J. M. Smith, President of the Wisconsin State Horticultural Society, on Strawberries for the North, and how to grow them.

He stated that while the strawberry is the only fruit that can be grown with any certainty from the borders of the torrid to the arctic zone, it may be said that the north temperate zone is its most favored clime. And yet, notwithstanding its adaptation to so many climates and soils, it is only within the last twenty-five years that this most delicious of our small fruits has become at all common. And now it is perfectly safe to say that a hundred bushels of berries is now used at the north where one bushel was used fifty years ago. It was about 1830 that Hovey's Seedling, and afterwards the Early Scarlet, were introduced and aroused attention to the cultivation of this fruit. These were the leading varieties at the north until about 1860, when Wilson's Albany made its appearance, and by 1863 had nearly taken possession of the northern markets, and as a market berry has virtually held its own until the present time. New varieties by hundreds have been introduced, and every effort made to supersede it with something better,

but none have yet succeeded. Though not in all respects a perfect berry, it is the most remarkable for the millions ever put into cultivation. It is at home in most of the south, and in the north can be grown wherever a good crop of corn or potatoes can be grown, and even in districts too far north to grow these crops with certainty.

The soil he prefers would be a light loam, rather damp than dry, have it thoroughly drained, and manure it heavily, say from twenty to forty loads of good stable manure to the acre. If he had plenty of land he would set the plants in double rows, that is, two rows of plants about twelve or fourteen inches apart each way, then leave a space of three and a half to four feet, and then set another double row, and so on until the ground was planted. He would allow the plants to fill the intermediate spaces in the double rows and about one foot wide upon each side, and keep the remainder clean with horse and cultivator. Some of the ranker growers, as the Crescent, may be set twice as far apart, and they will soon cover the allotted space.

He is satisfied that it will well repay the labor to pick off the blossoms the first season, and so keep all the strength for the development of the plant, and have it prepared to give the largest possible crop the following year.

Late in the fall, after the ground freezes, the plants should be covered with straw, or with what he likes better, marsh hay, just enough to hide them from view, and allowed to remain until the ground is done freezing in the spring. One of the greatest benefits of this covering is the protection given to the plants during the early spring, when the ground freezes, more or less, nearly every night, and thaws during the day.

After removing the winter covering,

he would carefully destroy every weed and blade of grass to be found in the plantation, and then put on a heavy dressing of well rotted manure, say fifteen to twenty loads to the acre, or if to be had, fifty to seventy-five bushels of unleached ashes per acre: if leached ashes, then twice the quantity. Keep the beds free of weeds at any cost. If the crop promises to be extra large, an additional coat of manure will assist the late berries to keep up their size, and thus add very much to the value of the crop.

For some years he has not had any vines beyond reach of artificial watering, but as regards the expense that may be incurred for this purpose, each grower must decide for himself whether the increased value of the crop will warrant the outlay. After harvesting a large crop, if the plants look exhausted and are throwing out but very few runners, he advises to plough under the plantation, as they will not pay for further cultivation. In this remark he refers to the Wilson only, never having been able to make any other variety bear itself to death the first bearing season, though he has repeatedly had the Wilson come so near it as not be worth caring for another year. If the yield has been only moderate, the second crop will probably be as good, if not better, than the first.

Such is Mr. Smith's method of cultivating the Wilson Strawberry after over twenty years of experimenting, and he does not consider two hundred bushels per acre an extra crop, for he has repeatedly had much more, and sometimes double that quantity—in fact, will not cultivate for any length of time any variety that will not yield at least six thousand quarts per acre; though he must confess that he has never succeeded in getting it from any other variety, the Crescent Seedling alone excepted.

Of other varieties, he says he did his best with Jucunda, but does not believe that he ever grew a quart of them that cost less than fifty cents; Seth Boyden's No. 30, Triumph de Gand, Sharpless, and many others, are large and beautiful, but not profitable for him, while Captain Jack, Red Jacket, Prouty, and Duncan, have borne with him about one-half of what the Wilson would have done under the same circumstances.

Such has been his experience in strawberry growing, and but once in more than twenty years has he failed to have at least a paying crop, and most of the time his crops have been very profitable. These large crops have been by no means the result of chance or hap-hazard cultivation, but of very rich land, well drained, heavily manured, thoroughly cultivated, well protected during the winter, surface manured in the spring, and well watered, if dry weather come on during the bearing season. His experience has taught him this lesson, that other things being equal, the richer the land the larger the crop.

At the conclusion of the reading of Mr. Smith's paper, the President called upon Dr. H. E. McKay, of Madison, Mississippi, to read his paper on Strawberry Culture in the South, in which he stated that their largest yields and finest berries are obtained from a clay loam. As to varieties, he said that up to the present time he had found no single variety to be trusted so implicitly as the Wilson. Banish it from our lists and culture, and you remove the beacon light that guides us to the goal of success in strawberry culture. The next most valuable variety for the south is the Charles Downing.

Some discussion was had upon the subjects covered by these papers, in the course of which Mr. Hale, of Connecticut, remarked that the cutting off of the blossoms from newly planted straw

berry vines was a thing *which must be done*. It is a great mistake to plant strawberries in the spring and leave them to bear what they will. Also the matter of irrigation is very important. Strawberries want water every day, all they can get, and a little more.

President Earle said that he mulched his plants in the autumn, did not wait until winter, and did not cover up the plants, but covered the vacant ground. For fertilizer he used wood ashes. The average crop in his country (Illinois), is forty or fifty bushels to the acre, though instances have been of crops running up to two hundred and fifty bushels to the acre. He considered four thousand eight hundred quarts to the acre, that is, one hundred and fifty bushels, a good crop, that with good varieties and good management ought to be secured with considerable certainty.

Mr. Evans, of Missouri, stated that a neighbor had fertilized a part of his strawberries with dried blood at the rate of four hundred pounds to the acre, and told him that for every dollar's worth of blood he received five dollars back.

The meeting then adjourned for tea.

THE MAGOG REDSTREAK.

An error has crept into the communication from our esteemed contributor, Mr. A. A. Wright, of Renfrew, at page 159, July number, where he has been made to say *Magog and Redstreak*, as if speaking of two distinct varieties, whereas it should read "Magog Redstreak," which is a seedling raised by Doctor Hoskins, of Vermont, and first grown on the shores of Lake Memphremagog, from whence it derives its name. Mr. Wright adds, "I thought at the beginning of the season that it was shewing signs of

weakness, but with summer weather it has far surpassed my expectations in growth and apparent hardiness. In form and habit of growth it is one of the most beautiful trees on my ground."

TREE AGENTS.

At the June meeting of the Michigan State Horticultural Society, Professor Sattarlee, of the Agricultural College, read a paper on the "Protection of innocent purchasers of plants and trees." In the course of the discussion which followed, Professor Beal is reported in the *Michigan Farmer* to have said "that if people were cheated by the tree agents it served them right, that they deserved to be swindled by tree sellers, for they will neither attend horticultural meetings, where they could gain information which would prevent them from being swindled, nor read the horticultural papers and inform themselves." Nor is Professor Beal very far wide of the truth. Ontario has been, if it is not now, a favorite tramping ground of tree agents from over the border, just because, as they themselves put it, the people did not know enough about fruits to tell an old variety from a new one, or enough about the nature of plants to know that strawberries never grew upon trees, or that trees, whose fruit buds perished by reason of our winter's cold, could not be made hardy by grafting them on French stocks. The Fruit Growers' Association of Ontario, by means of its meetings for discussion in various parts of the Province, and by the publication of the *Canadian Horticulturist*, has been disseminating information for many years, and yet to-day, it numbers scarce three thousand members, when it should have thirty thousand. Every man who plants a tree or a currant bush in all Ontario would be benefited far more than his one dollar's worth, and be saved from

being victimized by sharpers, by reading the publications of this society. When the information which would save him from the loss, and what is as hard to bear, the chagrin of being made the dupe of some sharp dealer, can be had at the cheap cost of one dollar a year, there is much soundness in the verdict of Professor Beal upon the man who is cheated, "Served him right."

The writer remembers an incident in point. At a meeting of our Fruit Growers' Association at Galt, some years ago, a gentleman brought in some samples of a strawberry which a dealer was introducing in that neighborhood as a new and very valuable variety, and was selling the plants at correspondingly high prices. The fruit was at once recognized by members present as an old and well known variety, plants of which could be readily procured at less than half the price asked for them by this enterprising introducer of old fruits under new names.

Truly, more than half the cheating would be stopped, if planters would use the means so freely and cheaply put within their reach of informing themselves, and if they will not do this, have they reason to blame any one but themselves if they suffer by reason of their own ignorance?

THE PRENTISS GRAPE.

Mr. T. C. Robinson, of Owen Sound, writes to the *Canadian Farmer* that he has been slow to realize the value of this grape; that after growing it for two years and having eaten the fruit, and noticed its fine, clear color, good size of berry and bunch, compact cluster, and delicious flavor, with no trace of foxiness, or acidity in pulp or skin, he fairly surrenders to its charms, especially in view of its native origin and healthiness and vigor, as vouched for

by so many and exhibited on his own grounds. He found the largest berries to measure three-quarters of an inch in the longest diameter, the average running at five-eighths or over. He adds a word of caution to those who live in a climate so cool that the Concord sometimes fails to color, and generally does not get its flavor even when it turns black, intimating that in such localities the Prentiss cannot be confidently recommended.

FRUITS IN MINNESOTA.

A correspondent of the *Fruit Recorder* who resides at Dover Centre, Minnesota, writes to that paper, that the winters of 1877 and 1880 were too severe for the Haas, Walbridge, Famense and Red Astrachan, but the Duchess of Oldenburg, Wealthy, and a few others came through all right.

Nearly all the Crabs have stood the winters bravely and given plenty of fruit. Grape vines that have been protected during winter do well and bear abundantly, but neglected vines are mostly killed to the ground. The best method of protection is to cover with earth, but straw, hay, or any other good covering will answer. In raspberries Mammoth Cluster, Turner, Highland Hardy and Brandywine did well, and Philadelphia and Purple Cane gave an immense crop, although the mercury fell several times to forty degrees below zero, and once to forty-six below. Of blackberries the Snyder, Taylor's Prolific and Stone's Hardy all stood the winter well, but Kittatinny was somewhat injured. His way of protecting raspberries is to put down scraggy sticks here and there through the rows before the ground freezes, and in early winter throw a little straw on the rows. The sticks hold up the straw so that the canes are not injured.

CORRESPONDENCE.

THE WILSON STRAWBERRY.

MR. EDITOR,—After trying a number of varieties, I have given up all but the Wilson. Last year I picked sixty baskets from one rod square of Wilson's in my garden. They are now just beginning to ripen for this year and promise a splendid yield. I planted the rod two years in April, kept them in rows about two feet from centre to centre, with a space of twelve to fifteen inches between. In April, a year ago, I laid slabs on the flat side between the rows.

Yours, &c.,

J. R. AYLSWORTH.

Collingwood, June, 1883.

GIRDLED APPLE TREES.

I see in a late *Horticulturist* that a great many apple trees were lost by girdling with mice last winter. Now, there is not a tree need be lost by that as the cure is simple and easy. As soon as you discover the tree in spring take grafting wax and cover the bare wood all over to exclude the air. I then wrap a newspaper all round the wax (the paper may be omitted); I then bank up the whole with earth, and the cure is complete; not one will die if properly done. I remember many years ago I had three trees split in the bark, and the bark raised entirely from the trees for eight or ten inches, and the wood quite dark and begun to decay. They were four or five inches in diameter. I thought they were certainly past redemption, so I dug up four peach trees and planted them instead of the four apple trees. I then got an axe and was about to cut the apple trees down when my wife came by chance and asked me what I was doing. I told her, and she asked if I could not cure them. I said I thought it was impossible. She asked if I would let her try

them. I said I would, but she might save her trouble. She got them all fixed and banked up as she had seen me do. They budded out and remained green all summer, but made no progress until next spring. I did not expect them to bud, but they did, and have borne heavy crops ever since. The peach trees are still standing among them. We have great crops of peaches and plums, but few apples.

WILLIAM BROWN.

Annan, July 12, 1883.

FRUIT CROP IN THE ANNAPOLIS VALLEY.

The fruit crop here will be very light, some few kinds excepted. The King of Tompkins County apple have set its fruit better than most varieties. I was much pleased with

MOORE'S ARCTIC PLUM

tree shewn to me a few days since in this valley. They had been planted three years, and such fruiting I have never seen before. The fruit is much thicker on the branches than as represented in the many plates or pictures of it that have been shewn to me. Also as to its being an annual bearer, I am informed by the owner that last season he had quite a quantity of fruit, but this season he has already had to brace up the limbs to keep them from breaking down. Also while many other kinds are full of disease and curculio stings, Moore's Arctic is completely free. There is no doubt in my mind but that it will be largely planted by orchardists.

Will some of your readers please to give a description of the apple known in Canada and in the United States as the Nonpareil?

Yours, &c.,

JOHN SAVAGE.

NOTE BY THE EDITOR.—Downing thus describes "Nonpareil": An old

English variety. Tree, free upright grower, productive. Fruit medium, roundish conical, yellowish green, with patches of dull russet, and red in the sun. Flesh crisp, juicy, vinous, aromatic, mild acid. Good—December, March.

Besides this there are the American Nonpareil, Braddick's Nonpareil, Early Nonpareil, Fair's Nonpareil, Fleet's Nonpareil, Foote's Nonpareil, French Nonpareil, Golden Nonpareil, Lodge-more Nonpareil, Lindley's Nonpareil, Martin Nonpareil, Ohio Nonpareil, Petworth Nonpareil, Pitmaston Nonpareil, Scarlet Nonpareil, Ross Nonpareil, Sweeney Nonpareil, White Nonpareil, and yet more, so that it may be somewhat difficult to say just which one is the one that our esteemed correspondent wishes to have described.

THE PETITE MARGUERITE.

TO THE EDITOR OF THE HORTICULTURIST.

DEAR SIR,—Allow me to say a word in favor of this excellent pear. In the spring of 1881 I planted two trees of the Petite Marguerite. During the season of 1882 they set more fruit than I thought good for young trees, so I thinned them to about two dozen on each tree, which ripened nicely about the 1st of October. The fruit was of first quality, rich, juicy and vinous, and just the right size for dessert fruit, while the tree is a vigorous upright grower. This year both trees are again loaded with beautiful fruit. While the Lawrence, Bartlett, Clapp's Favorite and Duchess d'Angouleme planted at the same time are still without any show of fruit.

I should like to know the experience of some others of your readers, and should their experience prove to be similar to mine I am inclined to think the Petite Marguerite may prove a profitable market pear as well as for

home use. Of course it will take time to prove whether it is more or less liable to blight than other pears. But for vigorous growth, early and regular bearing, and quality of fruit, and hardiness for this section, I think there need be no doubt.

THE BURNET GRAPE AGAIN.

I wrote you in November last my unfortunate experience in trying to grow this excellent grape. This spring I placed glass over four of the vines; they have grown vigorously and bloomed so that one week ago I had the fond hope that by September I should have some ripe fruit. But I am again doomed to disappointment. The bloom had only disappeared a day or two when the embryo fruit also dropped off. I apprehend the flower of the Burnet is not perfect, and that there should have been a vine having a perfect flower in the vinery with the Burnet. If this is not the cause of failure, perhaps Mr. Editor you can throw some light upon the subject.

The Burnet vines that are in the open ground promise to bloom well this year, and in a short time I shall be able to report whether they set their fruit more satisfactory than in former years in this particular locality.

Yours, &c.,

D. REESOR.

Rosedale, Toronto, July 1st, 1883.

ALUM WATER FOR CURRANT WORMS.

MR. EDITOR,—Will Mr. Webber be kind enough to inform your readers how he applies the alum water, and how strong he makes the solution? While many object to the use of hellebore in any way whatever, there could be no reason for objection to the use of alum water.

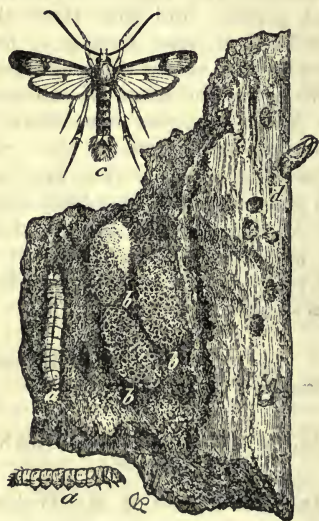
JOHN SAVAGE.

Windsor, N. S.

DANGER TO OUR SHADE TREES.

During the past few days evidence has been accumulating of the rapid increase of an injurious insect which promises to become a serious injury to the maple trees on our streets. Just now on the trunks of many of these trees the empty pale-brown chrysalids of this insect may be found protruding about half an inch. These chrysalids are so delicate in their texture that a touch will crush them, and if not interfered with otherwise the winds will detach them, and they will disappear within a few days.

I will endeavor, in a few words as possible, to trace the life history of this insect, which, with the aid of the accompanying illustration, will easily be understood.



The perfect insect (shown at *c* in the figure) is a very pretty, clear winged moth, resembling a wasp, which, when its wings are expanded, will measure about three-quarters of an inch across. It is known to entomologists as the maple Egerian, *Ageria aceris*. The wings are transparent and decorated

with bluish-black markings; the head is deep orange; the antennæ, bluish-black; the thorax yellow, and the abdomen bluish-black, banded with golden yellow, and terminating in a tuft of brilliant orange-red hairs.

The female lays her eggs on the bark of the trees chiefly affecting the soft or red maple, *Acer rubrum*, although it was occasionally found also on the other two species of maple used for street planting, namely, the sugar maple, *Acer saccharinum*, and the silver-leaved maple, *Acer dasycarpum*. In a few days small larvæ hatch from the eggs, and these at once penetrate through the bark and begin to feed upon the inner portion and sap-wood of the tree, making an irregular burrow which is packed with the castings of the larva mixed with minute woody fragments.

When full grown it is about three-fourths of an inch long, with a small yellow head and a white or yellowish-white body, which is darker on the hinder segments. Early in the following spring, when full grown, it appears as seen at *a*. It then eats its way nearly through the bark, leaving but a very thin film unbroken, when it retires within its burrow, and, having enclosed itself within a loose silky cocoon (see *b* in the figure) changes to a brown chrysalis. A short time before the moth is ready to escape the chrysalis works its way out of the cocoon, and, wriggling itself forward, pushes against the filmy layer of bark, ruptures it, and protrudes half-way or more from the opening (as seen at *d*), when the imprisoned moth shortly ruptures the chrysalis case and escapes.

It is while in the larval state that this insect is destructive. Many of the maple trees on our streets, and some of those in the Park, are being injured, and where the insect is allowed to multiply it is likely that it will,

eventually girdle the trees and kill them.

Remedies.—When once the larvæ are safely lodged under the bark no remedy will reach them, but the moths may be prevented from laying their eggs on the trees, or the eggs destroyed, by coating the trees with a mixture of soap and strong solution of washing soda or lye, made about the consistence of ordinary paint and applying it with a brush from the base of the tree upwards to first branches. The soap solution may be made either from soft or hard soap—if the latter, it should be warmed so as to melt it, when it will be more easily mixed with the solution of washing soda or lye.

PROMPT ACTION NECESSARY.

If this insect is to be prevented from further increase this year the remedy should be applied within a week, as the moths are now about and depositing their eggs. If delayed longer than this many of the young larvæ will probably have penetrated within the bark, where they are secure from injury.—WM. SAUNDERS, in the *London Free Press*.

EXPERIMENT WITH PEAS.

N. Y. AGRICULTURAL EXPERIMENT STATION,
Geneva, N. Y., July 14, 1883.

Our first planting of peas which included sixty-eight, so-called, varieties, was made April 21st. Of these the first to produce pods of edible size was Laxton's Earliest of All, which was at edible maturity June 21st. Following close behind came Kentish Invicta, Henderson's First of All, Ferry's Extra Early, Thorburn's First and Best, Ferry's First and Best, and Cleveland's First and Best, which showed pods fit for the table June 22nd. One day later came Carter's first Crop, Daniel O'Rourke, Early Alpha, Early Kent, and Sibley's First and Best, and the day following, or June 24th, the Am-

erican Wonder, Blue Peter, Carter's Premium Gem, and the Philadelphia Extra Early were noted at edible size.

On May 12th we made a second planting of sixty-three so-called varieties, of which fifty-eight were duplicates of the first planted varieties.

We find that the order of the edible maturity in the varieties of the second planting does not entirely agree with the first planting. Thus, of the second planting, Carter's First Crop, Daniel O'Rourke, Laxton's Earliest of All, Early Alpha, Cleveland's First and Best, Sibley's First and Best, Hancock, and Philadelphia Extra Early were all noted at edible maturity on June 30th. On July 1st we noted American Wonder, Blue Peter, Henderson's First of All, Ferry's Extra Early, and Ferry's First and Best. Kentish Invicta was noted July 3rd.

These results are expressed in the following table:

	Planted April 21.	Planted May 12
	Edible.	Edible.
Laxton's Earliest of All	June 21	June 30
Kentish Invicta	June 22	July 3
Henderson's First of All	do	July 1
Ferry's Extra Early	do	do
Thorburn's First and Best	do
Ferry's First and Best	do	July 1
Cleveland's First and Best	do	June 30
Hancock	do	do
Carter's First Crop	June 23	do
Daniel O'Rourke	do	do
Early Alpha	do	do
Extra Early Kent	do	July 7
Sibley's First and Best	do	June 30
American Wonder	June 24	July 1
Blue Peter	do	do
Carter's Premium Gem	do	July 5
Philadelphia Extra Early	do	June 30

We note that twenty-one days earlier planting gave from six to fourteen days earliness of crop in the varieties.

Averaging the periods between planting and edible maturity the order of earliness is as follows:

Laxton's Earliest of All gave crop in fifty-five days; Cleveland's First and

Best, and Hancock, in fifty-five and one-half days; Henderson's First of All, Ferry's Extra Early, Ferry's First and Best, Carter's First Crop, Daniel O'Rourke, Early Alpha, and Sibley's First and Best in fifty-six days; Philadelphia Extra Early in fifty-six and one-half days; Kentish Invicta, American Wonder, and Blue Peter, in fifty-seven days; Carter's Premium Gem in fifty-nine days, and Extra Early Kent in fifty-nine and one-half days.

To illustrate the value of selection in gathering peas for seed, we last season gathered a small quantity of the first pods that ripened of the Tom Thumb variety and a small quantity of the latest ones. We planted 100 seeds each from the earliest and latest pods, on April 21st and the same on May 12th. We note the difference in the results of the two selections of seed to date, as follows: In vegetation of the seeds there was, in the two plantings, an average difference of $14\frac{1}{2}$ per cent. in favor of the earliest matured seed; in the date of blooming an average difference of three and one-half days appeared, and in the date of edible maturity an average difference of five days, all in favor of the first planting. Perhaps of more importance is the difference of productiveness of the two selections of seed. Here we can only consider the first planting. Ten plants from the earliest ripened seed have produced, to date, sixty-eight pods, of which thirty-eight are well filled, while an equal number of plants from the latest ripened seed, have produced to date, only forty-nine pods, of which but thirteen can be called well-filled.

The Tom Thumb variety was selected for this trial because the pods are formed during a longer period than in most other varieties. It is possible that in varieties of which the pods nearly all ripen at the same time the difference in the results obtainable from

the first and last ripened pods would be less marked. This experiment serves, however, to illustrate the importance of selection in gathering peas for seed, and shows that the inherent quality of the seed used may have as much bearing on the resulting crop as the condition of the soil, or the methods of cultivation employed.

E. LEWIS STURTEVANT, *Director.*

DATES.

The date is the fruit of the *Phoenix dactylifera*. The palm date has a naked and cylindrical stem; it grows in Asia and in certain provinces in Africa, and is abundantly used by the natives.

The flowers of the date are inclosed in a long spathe and change into an oblong fleshy fruit, yellow in color, of which the thick skin is readily preserved by drying. It incloses a cylindrical, deeply furrowed nut, hard and corneous, which contains an oily and sugary substance. Each date tree carries a variable number of clusters, and these in maturity attain a length of about a meter, and a weight of ten or twelve kilogrammes. When the fruit is to be preserved, it is gathered before reaching maturity and dried in the sun. There are more than thirty varieties of dates, among which the male date, *dakkar*, or *menakker*, is pre-eminent. All these varieties have the same botanical characters, their trunks resemble the underground stems of ferns, their leaves are pinhate and luxuriant.

The palms and their congeners belong to the warm regions of the earth; they are found in India, Persia, etc. In Europe their sole representatives are the *Chamærops humilis*, and the cultivated date palm, whose fruit does not ripen naturally. The date is common in Spain, where it is cultivated upon a great scale for its fruit.

The gathering of the dates takes place in autumn, two or three times, and is over in three months. They are divided into three sorts according to their state of maturity. Exposed to the sun upon mats they become at first soft, then fill with a juicy pulp, then thicken and are no longer liable to change. The best dates come from Africa by the way of Tunis; they are as large as a finger and of an orange hue; their flesh is solid, vinous in taste, sweet, and somewhat viscous; they contain a nutritive principle helpful to horses, used on long journeys, and also useful in fattening cattle. The fruit is softened by boiling in water, and goat's milk is added. The Arabs in their pilgrimages across the desert make a species of bread from them, and use the pulp, extracted by pressure in earthenware colanders, for butter and sugar.

The fruit of the date tree contains mucilage, a gum similar to gum arabic, albumen, crystallizable sugar (cane sugar), parenchyma, pectose, citric and tartaric acids, coumarin, and water.

All parts of the date tree are used; the young branches recently cut furnish a milk which is both healthful and agreeable; this milk or sap when fermented affords an alcoholic drink named *lakhby*, or palm wine. Crushed dates with water also afford after fermentation the same decoction. Frequently the bark and fibrous portions of the young sprouts are removed to obtain the white substance within, which is eaten; the young leaves and the male flowers are also eaten when seasoned with citron juice, or arranged as a palm salad it forms a palatable dish. The Chinese use the date nuts in their writing and printing inks, and also as a dentifrice. The dried leaves are also used to make carpets and various other objects even in construction.—*Journal d'Hygiene*.

SORGHUM.

Sorghum has become to some degree a sort of by-word, for though largely cultivated in the Western and North-western States, and producing annually a return worth about \$8,000,000, still it has confessedly failed to do what was expected of it. Somewhere about thirty years ago the Chinese variety of the plant (the varieties are numerous) was introduced into this country, and the excitement in relation to it was not small. Its sugar producing qualities were extolled above measure; our sugar trade was to be revolutionized, so to speak; every farmer was to have a little mill, and a little kettle, and he was not only to boil out his own sugar, but to supply his less fortunate neighbors.

Some way, however, things did not seem to work right. The sugar no doubt was in the sorghum cane, for when its juice was boiled down a sweet syrup was obtained, but there the demonstration stopped. The sugar was in the syrup, but it most persistently refused to come out of the syrup; it could not be induced to crystallize; and though the syrup had a certain degree of value, yet it was not the thing wanted, and in the disappointment the popular feeling swung round to the unjust judgment of condemning sorghum, simply because it had been the victim of ignorance and mismanagement. Recent researches however have done much toward explaining and removing the difficulties which have been in the way of successfully crystallizing the sugar from the juice of the sorghum.

Part of this has been accomplished by work in the laboratory and part by work in the field, the mill, the boiling house, etc. The report presented by a committee of the National Academy of Sciences in 1882, has just been published as a Senate document. It is entitled, "Investigation of the Scientific

and Economic Relations of the Sorghum Sugar Industry, being a Report made in response to a request from the Hon. George B. Loring, U. S. Commissioner of Agriculture." The committee consists of Prof. Bremer, of Yale, Prof. Chandler, of Columbia, Prof. Johnson, of Yale, Prof. Silliman, of Yale, Prof. Smith, of Louisville, and Dr. G. E. Moore, of New York.

The report shows clearly that essentially the two points on which success depends are maturity of the cane, and prompt correctness in working. With these, sugar from a field of sorghum can be as surely and safely expected as from a like field of sugar cane, and with perhaps fully as great a return.—*Scientific American*.

PREPARING FRUIT FOR MARKET.

In packing peaches, the first point should be to assort them, making as many grades as the condition of the fruit requires. When brought to the packing shed, the fruit is at once thinly spread in the shade, in order that it may cool as much as possible. In assorting, any that are at all soft are put aside, to be left at home; then two or three qualities, extras, firsts and seconds, are made, and with the best growers, the packages of each are alike all through. It is allowable to turn the colored sides of the top layer uppermost, in order that the fruit may appear at its best, but not to select large specimens for the top layer. Those who send peaches to market for the first time, will find it to their advantage to observe this rule. In packing grapes for market, the box is opened at the bottom, fine large bunches are laid in and the box filled up with smaller bunches. This is done in order that the fruit, when the top is taken off, may present a good appearance, and if the filling is done with good fruit, even

if not the most select, there is no harm done. But if, as is sometimes the case, poorly-ripened fruit, and even loose berries are used to fill up, the grower will in time find that his brand is not in demand in the market. The fruit-grower, who expects to continue in the business, can not afford to pack his fruit dishonestly.—*American Agriculturist for August*.

SEED BREEDING.

N. Y. AGRICULTURAL EXPERIMENT STATION,
Geneva, N. Y., July 7th, 1883.

The fundamental principles of reproduction seem alike in the animal and vegetable kingdom. In both, the mystery of life; in both, accretion through cell multiplication; in both, changes of form as arising from immediate heredity and as governed by environment. In our domesticated plants, as in our domesticated animals, we have the male and the female element of varying potency whose union is productive of the new individual. Both classes are alike influenced by the conditions described under the term, selection. We can, hence, speak of breeding the plant as legitimately as we can speak of breeding the animal. We may also use the term, pedigree, as applied to improved forms of plants, as legitimately as we can use the term, pedigree, as applied to the improved forms of animals. As in our domesticated animals, improvement is brought about through that systematic mating and selection which constitutes pedigree, so the same system in our domesticated plants will avail to produce an improvement which may be described in the same terms. If a pedigreed animal is superior in value on account of the conditions which allow this term to apply, then a pedigreed plant must necessarily possess superior value over the plant which has been developed only through unsystematic effort. As the

recognition of the value of systematic effort in improvement has differentiated the pursuit of animal breeding and has constituted a class of men called breeders, so seed-growers should be likewise differentiated into a class called seed-breeders. Seed-breeding is already beginning to be, and soon must become of importance as a farm or garden pursuit.

In gardening we have many illustrations of seed-breeding in the production of new forms of vegetables secured through hybridization and careful selection, as also in the system called "rogueing," which consists in the removal from plants designed for seed purposes of all the plants which are untrue to the form desired. In agriculture we have fewer illustrations, and the farmer has applied less discrimination to his field produce than the gardener has to his small, but more intensively cultivated garden. We have, however, a few illustrations in agriculture of what may be accomplished through the selection of seed under that uniformity of idea which is described as seed-breeding. In 1857 Major Hallet, of Brighton, England, commenced his experiments on wheat, selecting his seed from the quality of the plant produced, his standard embracing hardiness, trueness to type, quality of sample, productiveness, power of tillering, stiffness and toughness of straw, and earliness of ripening. The results obtained may be expressed in the following table:

Grains in original ear.	Kind of wheat.	Grains in improved ear.
45	Original red, commenced in 1857	123
60	Hunter's White, " " 1861	124
60	Victoria White, " " 1862	114
32	Golden Drop, " " 1864	96

We have here an illustration of what has been obtained in the effort to increase the prolificacy of the plant, and this gain in prolificacy has also been attended by a gain in the size of

the kernels. The amount of crop raised, or prolificacy of the plant under circumstances of field seeding also, if reports are to be trusted, offer parallel results; the increase of yield by the use of Hallet's seed in various countries of the world, being reported as between two and three times the average crop from other varieties.

In the case of the Waushakum corn, the selection being made by castrating the barren stalks for two years in succession, the seed saved being not from the most prolific stalks that were left, but merely of the perfect ears, raised the average crop from about 45 bushels to about 80 bushels to the acre.

Although the Station has not as yet had time to do much work in this direction, yet a beginning has been already made. On account of the importance of these facts relating to seed, we are disposed to quote the conclusions gained by Major Hallet which read as follows:

1. Every fully developed plant of a cereal presents an ear superior in productive power to any of the rest on that plant.
2. Every such plant contains one grain which, upon trial, proves more productive than any other.
3. The best grain on a given plant is found in the best ear.
4. The superior vigor of this grain is transmissible in different degrees to its progeny.
5. By repeated careful selections the superiority is accumulated.

6. The improvement, which is at first rapid, gradually after a long series of years is diminished in amount, and eventually so far arrested that practically a limit to improvement in the desired quality is reached.

7. By still continuing to select, the improvement is maintained, and practically a fixed type is the result.

An account of Major Hallet's process may be found in *Popular Science Monthly* for July, 1883.

So far as the Station work has gone, these claims of Major Hallet have received confirmation. It is particularly noticeable that when each kernel of the ear of wheat is planted by itself, one kernel has invariably proved far more productive than any other one, not *per gradum* but *per saltum*, i. e., not regularly, but at a jump.

E. LEWIS STURTEYANT, *Director*.

EARLY GREENS FOR NEXT SPRING.

The city markets in the early part of spring, and often in a mild spell in winter, abound in "greens," and there is no reason why these should not be equally abundant on every farm. Where the meat served is to a great extent salted, green vegetables are not only acceptable, but necessary to health. Cabbage is for many so indigestible, that it can not be eaten, and where this difficulty does not exist, a variety is always welcome. Spinach, the most delicate and palatable of all the vegetables used as greens, can be raised on any good farm land, and with very little trouble. The soil being well prepared by the use of the plow and harrow, mark it off in fifteen-inch drills, and sow the seed rather thickly, covering it with about half an inch of soil. Use a roller, or pat the soil down firmly with the hoe or back of the spade. Some carefully go over the rows and tread down the soil over them. The fall rains soon bring up the plants; they will grow rapidly and be large enough to gather in September or October. For use at this time, the plants, where they are thickest, are to be cut out at intervals, using a stout knife, leaving the remainder room to grow. Where the winters are severe, scatter straw, leaves or other litter between the rows,

and slightly cover the plants. As soon as the ground thaws, cuttings may be made, and if this is done so as to thin the plants a second time, the rest will grow all the larger, and be ready to use later. "Sprouts," as it is called in the market, is a variety of kale, a cabbage that does not head. This is cultivated in the same manner as spinach. If a farmer finds that he has more spinach than can be consumed at home, a few barrels of it will meet with a ready sale at the nearest market.—*American Agriculturist for August*.

LIMA BEANS AS A FARM CROP.

The Lima, the most popular bean among amateurs and market gardeners, is slow in finding its way into the gardens of farmers. The dry beans sell for several dollars a bushel, and the market has never been adequately supplied. Lima beans are easily raised, and yield as bountifully as most other pole beans; and they continue to blossom and bear until killed by the frost. We know of no reason why they can not be made a specialty, like hops or tobacco, and grown on a large scale. They would require better soil and treatment than the common field bean, but as the price is three times greater, these could well be afforded. A rich gravelly or sandy loam suits them best, and the phosphatic manures are well adapted to them. On this kind of soil we have not found them to run to too much vines, even with heavy dressings of compost prepared from muck and stable manure. The vine is a strong grower and requires abundant nourishment. The pods are formed quite thickly from the top to the bottom of the poles. They want the full benefit of the sun and the rows running north and south, should be four feet apart and the hills four feet apart in the row. In planting we prefer to put the eye

downwards, and not more than one inch deep. The first of June is early enough for this latitude. The bean needs frequent cultivation, until the vines shade the ground. This crop is well suited for farmers remote from cities and markets. The market gardener will not grow Lima beans to sell dry, because they are worth more in the green state, and he can sell all he can raise. But the farmer, however remote from the city, can market his whole crop in the winter, and be well paid for his labor.—*American Agriculturist* for March.

SHRUBS WITH ORNAMENTAL BERRIES.

In answer to inquiries for a list of shrubs and small trees which produce ornamental fruit after flowering, and after the leaves have fallen in autumn, the *Country Gentleman* names:

Prinos verticillatus, or Black Alder, which grows wild in muck swamps, and bears a profusion of scarlet berries, which continue through a large portion of winter. It grows well, and produces its masses of berries when removed upland.

Celastrus scandens, Bittersweet, is a climber, and with its clusters of orange-scarlet fruit may be made a graceful display in winter.

Berberis vulgaris, the Barberry, is ornamental as a shrub when in flower, and also with its beautiful racemes of berries, the purple variety being the most ornamental.

Euonymus atropurpureus, Burning Bush.

Viburnum Oxyccoccus, the Bush Cranberry.

Symphoricarpos racemosus, the Snowberry.

Juniperus Virginiana, the Red Cedar, some trees of which bear a pro-

fusion of blue and purple berries, which have a singularly beautiful effect in winter, in connection with the dark-green foliage of the trees.

Sorbus Americana and *aucuparia*, the Mountain Ash, with their several varieties.

Shepherdia argentea, the Buffalo Berry, bears dense masses of orange-scarlet berries, and, being dioecious, it is necessary to have staminate and pistillate plants growing together. It is a shrub of straggling growth, but by pinching back and training, it may be brought into a symmetrical shape.

Crataegus pyracantha the Evergreen Thorn, is a low-growing evergreen shrub, which, late in autumn and early in winter, affords a fine display of dense clusters of red berries. Being slightly tender, it should be planted in the shelter of evergreen trees—*American Garden*.

GRAFTING THE GRAPE VINE—A NEW METHOD.

We desire to have new varieties of grapes come quickly into bearing, but vines from nurseries are usually tardy. Even after careful nursing they will often droop and die, while a few buds cut off on arrival and properly grafted may produce fruit in a short time. Grafting on cut off underground gnarly stumps of vines, as usually practised, is very uncertain at best. Our method is to take a good strong branch or cane of vine, or even a whole young vine when a change of fruit is desired, and whip graft in the usual way. We then cover up the vine in the soil as near the roots as possible, leaving above ground only a bud or two of the graft. It is well known how quickly a layer will make a bearing vine, as it has the advantage of the parent roots as well as the roots it produces. The layer may be extended, if long enough, to grow

where the vine is to remain. Vineyards may in this way be quickly changed to better varieties.—*American Agriculturist for April.*

IS FRUIT-GROWING PROFITABLE?

N. Ohmer, of Dayton, Ohio, at a meeting of the Ohio Horticultural Society, read a paper on this question in which he said :

"First the individual must have a love or taste for the profession ; must be intelligent and industrious ; must work with his eyes open ; must read up, and go from home occasionally to see how others in the same profession manage their orchards and fields of berries. I have never started out on a tour of observation, without learning something new and applying it to my benefit. If you don't read up, and *get up*, you will very soon be numbered among those *who do not* succeed in making fruit-growing pay.

"The next condition I would name is the necessity of having proper soil and location. I would on no condition select a low and sandy bottom soil, but an elevated position, and good rich clay loam, well underdrained, either naturally or artificially.

"I would advise a beginner to go slow at first ; that is, not to plant too largely of any one kind of fruit until, by experience, you know what does best in your particular soil and location. 'But that is just what we want to find out,' some of you will say. My experience, in every particular, will only apply to myself. A beginner must experiment more or less, if he expects to succeed.

"I know a gentleman who, because some other man succeeded in making a big thing out of the Iona grape, planted two thousand dollars' worth of that particular grape, and the result was a failure. Another party planted largely of the Buffam pear, and the result was another failure. I might give you, in twenty-five years' experience, some grand results with particular fruits, in specially favorable seasons. For instance, I gathered and sold, in one season, from three and one-sixth acres, 543 bushels of Wil-

son's Albany strawberries, which were sold for near \$2,000. From four acres of Kittatinny blackberries, 562 bushels, which were sold for near \$3,000. From one and three-quarter acres of grapes, a net sale of \$1,100. From a half acre of quinces, \$300 worth of fruit, &c. But these are exceptional, and not general. I therefore repeat that the beginner must first try on a comparatively small scale. This will apply particularly to berries. Of tree fruits it takes a longer time to ascertain the value of any particular kind. I would therefore advise a beginner to make his choice principally from such as are known to do well in his neighborhood, and not plant too many varieties, though you want those that will ripen through the entire season.

"The time has come when it matters but little about your being *near* a good market. Two or three hundred miles is now called a near market, and is so, in fact. I live, as many of you know, near the city of Dayton, Ohio, a city of about 50,000 inhabitants, which might be called a good market, and certainly it is, yet but little of my fruit is offered for sale in the city, being mostly sent to other markets, generally to the North, where better prices can be obtained.

"Of berries, I would advise to ascertain, by experience, what varieties do best with you, let it be of strawberries, raspberries, or blackberries. When you have found that out, plant largely of those that do best, never forgetting the fact, however, that there are more failures in planting too many acres of any one of the above named, especially the strawberry, than too few. I know a man who had made a great success with an acre or two of strawberries, gathering from 20 to 30 bushels per day, and was so elated at his success that he concluded to enlarge his fields—and, to use his own language, said 'he would hereafter gather 100 bushels a day or bust.' Well, *he busted!* You can make more money from one acre of strawberries, well attended to, than you can from five acres partially neglected. That will apply to all small fruits, but especially to the strawberry.

"It is hard for me to say just what one acre of any kind of fruit will net me annu-

ally, because I have many acres of each variety, and I sum up all together. I keep an exact account of all fruits sold, and the cost of same, and the result has been to me, in the last twenty-five years, eminently satisfactory. If any one has any doubts on the score of profits, let him come and see me, and I will show him figures that will satisfy him, or them, that fruit-growing, as a profession, does not always prove a failure."

WINTER PEARS.

A few facts will shew that the keeping quality of pears depends greatly on several circumstances, among which are the influences of soil, cultivation and season of ripening, and still more on the apartment in which the fruit is kept. Take the Anjou, for instance—circumstances favoring early ripening will give specimens which will be mature and melting by the end of September, but more commonly they ripen in October and November. This pear has the excellent quality of keeping without decay some weeks after the flesh has become melting and fitted for eating, if properly managed. In a cool apartment, the ripening may be retarded from December into January. The Winter Nelis is strictly a December fruit; but when ripened early and kept in a warm place, it is in excellent eating condition in November and sometimes in October. In a cool fruit room, after the season had been favorable for the purpose, we have actually had them in fair eating condition in early March. The Easter Beurré is a spring pear, and when well grown will keep, as is well known, into April; but it is so uncertain and unreliable at the North that few cultivators attempt to raise it. The longest-keeping, fully reliable pear of which we have made a full trial, is the Josephine de Malines. The specimens rarely soften in any year before January, and usually a part of them keep into February. This year we kept them

much longer than usual, and had specimens in melting and fair eating condition on the 2nd of May. The fruit room is not cooled by artificial means, but is so arranged that it may be ventilated completely at all times, and its temperature is shewn by thermometers. The spring being unusually cold, favored long-keeping.—*Country Gentleman.*

FRUIT CULTURE IN COLD RUSSIA.

Professor J. L. Budd's record of the wonderful success attained by the Russians in fruit culture, is certainly very encouraging to those living in the colder parts of the United States. The whole of the large province of Vladimir, which is east of Moscow, is given to the growing of cherries. Hundreds of proprietors in this province have each orchards of 10,000 "bushes." These fruit trees are not allowed to grow in tree form; the oldest branches are pruned out, it having been found that the best fruit is formed on young shoots, several of which are left to grow from one root. South of Vladimir, near the fifty-sixth parallel, where the thermometer sometimes falls to fifty degrees below zero, immense quantities of plums are raised, many of the varieties being equal to the best German prunes. Pears and apples are also a success. The apple trees, too, are made to grow low and bushy, but they bear abundant crops of excellent, highly-colored fruit. The method by which the Russian orchardist is able to obtain a variety of fruits of good quality in a climate where the winters are more severe than in the coldest part of Minnesota, is certainly worthy of being tested in some of the less favored regions of our own country. The main points ascertained in this method seem to be; selection of hardiest varieties of seedlings; close planting to secure mutual protection; low pruning; the growing of more than one shoot from

a root; and retaining only the young vigorous wood. It would be well to test this method on some of our bleak prairies, not only with Russian varieties, but with some of our own hardiest kinds.—J. M. M., in *Green's Fruit-Grower*.

SNYDER BLACKBERRY—ITS PRODUCTIVENESS IN IOWA.

I have one plantation 10 by 11 rods square; this patch containing 110 square rods was put out in the spring of 1877, on land that had been in cultivation with crops of various kinds, about thirty years, soil clay loam, bleak north-west exposure. A part of the plot had previously been set to apple treestwenty feet each way, and when setting the blackberries one row was set on line of rows of trees, and two rows between, making rows of blackberries six feet eight inches, and plants four feet in the rows, but sprouts coming up having been left to grow up in the rows making a perfect mat and now forming a complete hedge row, except where the apple trees stand, nineteen of which now large are still growing in the plantation without any perceptible injury to the blackberries except the space they occupy.

The plantation was cultivated and hoed three seasons, since then nothing has been done to it except to cut off weeds and sprouts between rows, and cut back and prune fruiting canes annually. No mulch or fertilizer of any kind has been used. The surplus sprouts between rows have all been taken up each fall or spring and plants sold or used in making other plantations, and no evil results from such practice has followed, which seems to be conclusive evidence that digging surplus plants from bearing plantations does not injure the plantation as has been claimed.

I give this brief sketch of the patch and its treatment, that your readers may have some idea how the large crop of Snyders that I have to report was produced.

This plantation has produced a paying crop of fruit since '78, its first fruiting year, and was the past season in full bearing, judging from the amount of fruit produced, which was 5,643 boxes. Yet, as incredible as it may appear, there was actually picked and sold this season from the patch containing 110 square rods over 176 bushels of berries which would be at the rate of 256½ bushels in round numbers per acre. My other and younger plantations, not yet in full bearing, produced equally as well in proportion. Of course we would not expect to obtain as large a crop every season, for notwithstanding the Snyder is called an iron-clad and will stand more abuse than any other blackberry of which I have any knowledge, yet it does some severe winters get injured and fails the following season to produce a full crop. But during the eight years I have known and observed its behaviour, it has not in this locality failed to produce a paying crop each and every year, and with few exceptions enormous crops. Therefore my observations and experience with this noble berry leads to the conclusion that in vigour and beauty of bush, uniformly fine size and splendid quality of its berries, extreme hardness and marvelous productiveness it stands without a rival among blackberries, especially in the north-western States, where all, or nearly all other varieties are unreliable and unsatisfactory.—S. R., in the *Fruit Recorder*.

Clinton Co., Iowa.

IMPORTED SPARROWS.—Secretary Garfield says one pair of our insectivorous birds are worth more to the fruit-grower than all the imported sparrows.

RASPBERRIES IN ILLINOIS.

Messrs. P. Earle & Sons' experimental patch of raspberries affords a good study of the different varieties now under cultivation. A visit paid last week was a little late for some of the earlier sorts. The 30-acre field of Turners had been in the hands of the pickers for three weeks and was yielding a first crop of from 50 to 60 crates daily. As is well known, this is the Messrs. Earle's favorite variety which they have championed for the last 12 years.

The rows of the Reliance red raspberry showed this to be a very prolific bearing variety, of a well flavored, large, dark colored berry. The grains are large and the general shape of the berry too nearly round to render it a good shipping berry. Mrs. Earle considers it an excellent berry for the family garden and table use, as its lively, sprightly flavor is quite an agreeable change from the cloying sweetness of the Turner. It parts readily from the stem, and is a decidedly better berry than the old Philadelphia.

The Lost Rubies very greatly resemble the Naomi, which we have grown for fifteen years. The berry is large, with large grains, of lively flavor, prolific, and of good color and firmness. It has the same fault of the Naomi in not being a perfect self-fertilizer, more or less of the grains or berry being imperfect, and, like the Naomi, it clings to the stem, and is apt to crumble or break in the pulling off. The only difference noticeable between the two is the color of the lower cane, which, in the Naomi, is a pinkish purple, and in the Rubies a light green. They are not, either of them, berries adapted to field culture in Southern Illinois.

The Brandywine is a good-sized, bright-looking, firm berry, and appears every way desirable, except in flavor, of

which it can hardly be said to have any. Like the Ben Davis apple, it is sold on its good looks, and it sells well. Perry Turner, of Jonesboro', has five acres of the Brandywine which have paid him better than any five acres of any other raspberry have paid.

The Cuthbert, or Queen of the Market, is a berry that pleases Mr. Earle very well. It is of a beautiful, high crimson color, conical in form, holds on well to the stem, and is of very good flavor. A dish of these berries is exceedingly attractive. It is somewhat later than the Turner, which is not always a fault.—*Farmer and Fruit Grower.*

EARLY APPLES FOR MARKET.

In selecting early apples, it is important to regard appearance, as such fruit is judged by the eye. A friend told us, a few years ago, that two trees of the "Summer Queen" were the most profitable of any in a large orchard. It is later than some others, but its large size and showy character, it being handsomely striped and shaded with red, caused it to bring the highest price. Another very showy fruit—and one of the most attractive—is the "Duchess of Oldenburg." It ranks, perhaps, as an early autumn, rather than as a summer fruit, but is so hardy, productive, and handsome, that it should not be omitted. Among other excellent early sorts are: "William's Favorite," a handsome red fruit; "Tetofsky," a Russian apple, now becoming very popular; "Red Astrachan," a beautiful red, but sour apple, and perhaps more generally planted than any other; "Carolina Red June" is similar in color. "Early Harvest," "Large Yellow Bough," and "Summer Pippin," are among the best of the yellow or green apples. We have given a sufficiently large selection for a market

orchard. If one wishes choice fruit for home use, he can find nothing better than the "Pimate," "Early Strawberry," and "Summer Rose," but save the second named, they are not so desirable for orchard culture. Selecting early apples, and packing them carefully in new half barrels, lined with white paper, or in suitable crates, will greatly increase the market returns for this kind of fruit.—*American Agriculturist for August.*

THE BLACK KNOT ON PLUM TREES.

Dr. B. D. Halsted, writes of a serious pest of the orchard, in the *American Agriculturist* for August.

Mr. D. D. Gaines, near Catskill, N. Y., brings us peculiarly distorted branches from his plum orchard, and complains that the trouble is a serious one, as he has over two thousand plum trees more or less affected. The cause of this distortion of the smaller branches is a fungus, and it has long been known as "Black Knot." It has often been claimed by careless observers that the swellings were due to various insects which infest the peculiar outgrowths. The parasitic fungus attacks the young branches in early spring, causing them to increase rapidly in size; rupture of the bark soon follows, and the soft substance, coming to the surface, expands in an irregular manner, and is shortly covered with a peculiar olive-green coat. The fungus plant is like many others of the same low order of vegetation as the various moulds, mildews, etc., and consists of a multitude of fine threads, that run in all directions through the substance of the plum tree. The olive color of the surface is due to a vast number of minute bodies called spores, which are formed on the tips of the threads, and, breaking away from

their attachments, serve to propagate the trouble. After the knot has grown to some size, its soft substance offers a good home for various kinds of insects, and it is rare to find such a knot that is not thus infested. This was the strong argument in favour of the view that the knots were of insect origin. The scientific name of the fungus is *Sphaeria morbosae*, and this, the cause of the black knot, is as much a plant as the plum tree upon which it lives.

The olive surface-spores continue to form through the summer, and at autumn another kind of spore begins to develop within the substance of the knot. These are of slow growth, and are not ripe until the following spring. The only remedy thus far known is the judicious use of the knife. The knots should be cut off and burned whenever they are found. They are most conspicuous in the winter, when the branches are not covered with leaves; but when a tree is attacked, it is not wise to delay the removal until a more convenient time. The diseased branches should always be burned, otherwise the spores will continue to form for awhile, and thus propagate the contagious pest. If the tree is badly attacked, it may be best to remove it entirely.

The Choke Cherry is a favorite host of the black knot, as the neglected fence rows often show in winter. All such trees should be rooted out. The cultivated cherry trees are subject to attacks by the black knot, for which the same remedy as that for the plum tree is recommended. Use the pruning-knife, always at sight, and cut several inches below the swelling, that all the infested portion may be removed.

ARSENIC WATER FOR CODLING MOTH.—J. N. Dixon, of Iowa, sprayed his apple orchard with arsenic water to eradicate the canker-worm, and unexpectedly found it a remedy for the codling moth.

A GOOD PLACE FOR FOREST TREES.

The Lancaster (Mass.) *Farmer* says, in alluding to the use which may be made of stony ground :

"There is on many farms more or less of ground so rocky that it will not repay the expense of cultivation, and all such spots should be planted with trees. These may be got out of the woods or farm nurseries ; or what would be easier, cheaper and probably much more effectual, the seeds of various kinds of trees could be sown, imitating as nearly as possible the natural processes which have produced all the forests of the country. The seeds of the different trees should be gathered in the woods just at the time they fall naturally, and they should be immediately planted in little shallow holes among the stones and covered with a little earth. There the rains of autumn, the snows of winter, and the sunshine of spring would bring up a crop of young trees, which should be fenced in from cattle and left to themselves. They would require no labor after the first sowing and fencing except subsequent thinning out from year to year of those that were too crowded or most valuable for economic purposes. If hickory nuts, black walnuts, butternuts, chestnuts, and the seeds of sugar maples, pines or spruces were any of them sown every here and there over the place intended for a grove, the most valuable kinds, and those that thrive best could be ultimately left to become great trees. After ten years the annual thinnings of this grove for firewood, fencing, hop-poles, railroad ties, etc., would probably make it as valuable a part of the farm as any other, and when the black walnut and butternut trees become large enough to be sold to cabinet-makers the value of the grove would be very great. The present race of farmers may say they would not live to see the trees become fit for the cabinet-makers,

but none the less would the growth of that grove increase the value of the farm every year, and that whether the owner sold it or left it to his children."

SPARE THE TOADS.

There is no better abused, and probably no more useful creature in the garden and upon the farm than the toad. That apt simile, "like a toad under a harrow," tells the story of his wrongs. And now that our harrows are armed with steel teeth, and are supplemented with clod crushers and cultivators of various types for comminuting the soil, the sorrows of the toad are intensified, and he is threatened with extinction in all cultivated fields. Stay thy hand from slaughter, tiller of the soil. The toad is as useful in his place as the implements of tillage you drive over his back so thoughtlessly. "The jewel in his head" is not there, but in his capacious stomach, that always has room in it for one more bug, one more worm, that destroys the food of man. Watch his habits for a day, and observe the lightning thrusts of his tongue as he scoops in your enemies, and you will have a better appreciation of his work, and of his place in good husbandry. If your garden is without toads, you can afford to purchase them for stock. They will pay good dividends, as surely as superphosphate.—*American Agriculturist for August.*

THE TAYLOR BLACKBERRY.

Mr. O. B. Galusha, President of the Illinois State Horticultural Society, says of this berry :

"I have had the Taylor since its first introduction, paying \$1 each for the plants first purchased, and have been more and more impressed with the deliciousness of its fruit each year. I know of no berry of any species or variety whose juices are of a purer, more delicate sweet flavor. I think it will bear a crop five seasons out

of six. The canes are of smaller growth than those of the Snyder—which is an advantage, and produce a large crop of fruit, which is of a symmetrical, oblong shape, good medium size, of a shining black color, and as has been said, of an exquisitely delicious flavor—no twang left after eating and no core in the centre to be masticated or swallowed whole, as with Kittatinny. The Taylor also has one peculiarity which forcibly struck all our berry pickers who picked the fruit this year, viz, the absence of sunscald which was so common this season."

SINGULAR FREAKS.

THERE is in Mr. L. Harwood's garden, in the West Ward, a Siberian crab tree, which has been bearing about four years, that is covered with blossoms, but has not had a leaf on this season.—*Orillia Packet*.

MR. W. H. KENT, of Medonte, on going to examine his fruit blossoms this spring, found that one tree, off which he had gathered fifteen bushels last autumn, was completely laden with small apples, which must have formed in the fall, after the fruit had been gathered. What effect this will have on the tree he cannot predict, never having heard of such a phenomenon, but he fears it will kill it.—*Orillia Packet*.

BOOK NOTICES.

PREMIUMS OFFERED AT THE SEVENTEENTH ANNUAL EXHIBITION OF THE NEBRASKA STATE FAIR, to be held at Omaha, 10th September, continuing for six days.

COMPLETE GUIDE TO SILK CULTURE, by L. Capsadell published by W. B. Smith & Co., New York. In this little volume the author, Secretary of the New York Silk Exchange, has given in the shortest possible space concise and practical directions in every detail of silk culture; Silk-feeding Trees, and how to Raise them; Cocooneries; Eggs, and how to Hatch them; the Rearing of Silk-worms; Races, Varieties, and Value; Gathering, Stifling, and Packing Cocoons; Reproduction; Reeling, and Spinning, and Requisites for Silk Culture are plainly described and illustrated. The wide and promising field which, at present, is opening for

American silk culture, which cannot but develop into a most important industry, in the near future, makes the publication of such a work most desirable.

MISCELLANEOUS ITEMS.

SHARPLESS STRAWBERRY.—Mr. D. C. Hommell, of Knoxville, Tenn., shows up a strawberry of the "Sharpless" variety that measured eight and one-quarter inches in circumference.

ARE SMALL FRUITS PROFITABLE.—A fruit grower who has had considerable experience in the business says that small fruits as an average, such as strawberries, raspberries, blackberries, currants, grapes, etc., yield, as a rule, double the profit of apples, pears, peaches, plums, for the reason, principally, that small fruits come immediately into bearing, and produce every year. Prices are more equal from year to year, varying less than apples and pears.—*Prairie Farmer*.

WATERLOO PEACH.—This is the largest very early peach we have grown or seen. The first specimen ripened July 14th, and measured 10 inches in circumference. All the fruit was gathered and mostly over-ripe, on the 19th of the same month. It ripened about three days in advance of the Alexander. It is a remarkable keeper, ripe specimens have been kept in perfect condition nearly a week after being picked. It will therefore be valuable for shipping.—*Fruit Recorder*.

VALUE OF THE SUNFLOWER.—It is the best egg-producing food known for poultry, keeping them in a thriving condition and largely increasing the production of eggs. Every poultry raiser who tries it will find that this seed is the food known for glossing the plumage of fowls, and is almost indispensable to those who want to fit their birds for exhibition to the best advantage. The Russian sunflower is easily raised, requires very little care, can be grown in fence corners or other places difficult to cultivate. Its production of seed is immense, yielding often at the rate of one hundred bushels to the acre. It should be planted in hills four feet apart, any time from the tenth of May to the first of July. Three quarts of seed will plant an acre.—*Iowa Homestead*.

TOMATOES raised in poorish light soil will ripen ten days earlier than those raised in rich soil. We know this from the actual test during the present season. If large, showy tomatoes are wanted, regardless of flavor or time of ripening, then the rich soil and the rank growth are needed. Cutting off all but one or two fruits of the clusters while they are small and green will also cause those remaining to grow to a larger size.—*Rural New Yorker*.

THE SILVER BELL TREE.—*Halesia tetrapetala*, known in England as the snow-drop tree, and in this country as the silver bell, is one of the handsomest of all our hardy shrubs. It is a native of upper Virginia and Southern Ohio. Its white, bell-shaped flowers appear in May, and impart a graceful appearance to the whole plant. The flowers are followed by a four-winged fruit, hence its specific name. It sometimes grows twenty feet or more in height, but in gardens is usually a large shrub. On account of its rather difficult propagation it has not been largely introduced into cultivation.—*Country Gentleman*.

LARGE PEACH ORCHARDS.—The largest peach orchard in the world, without exception, is that of John Parnell, at West Point, Ga., which contains 135,000 trees. The frost on the 23rd day of April destroyed about one-half the crop. The next largest orchard belongs to Judge Cunningham, at Griffin, Ga., and has 60,000 trees. About one-third of this crop is injured. The fruit centre of Georgia is two miles from Griffin at Vineyard, where the prospects are good for a fine crop. The peach crop of Georgia, this year, will be about half the usual average, but the fruit will be larger and better, from the thinning out by frost.—*Farm, Herd and Home*.

APRICOT-GROWING IN CALIFORNIA.—The *Wine and Fruit Grower* says;—We learn from the Marysville *Appeal*, that apricot orchards are the rage in its immediate section. The past season, trees three years old paid ten dollars to the tree. The *Appeal* adds its testimony to the fact that there is not the slightest danger of overdoing the business, as the canneries can handle all the fruit that can be produced. It is stated that some of the far-

mers in the vicinity of Berryessa, located on what they have recently learned to call apricot lands, are preparing to engage extensively in fruit culture. Thousands of apricot trees are to be set out on lands heretofore "wasted" on grain culture.

PRESERVING PEAS.—The most effectual method we have found for preserving peas from withering or drying up in a drouth, is to mulch them thickly with coarse hay or straw, to a width of at least two feet on each side of the row. Our garden soil is a fine, porous gravel, and unless the season is cool and moist, the pea vines dry up so badly as to produce little fruit. Mulching heavily is consequently a necessity in order to save them. By doing this, we have obtained as good crops as when May, June, and July were cool and rather rainy. It is not necessary to bush dwarf peas. Still, when exposed to a strong wind, they will sometimes blow down, and then the further advantage of their being mulched is that the pods are kept clean and dry, and escape being mildewed. It is an excellent thing also to mulch both pole and bush beans, melons, squashes and cucumbers in the same way.—*American Agriculturist for June*.

AMPELOPSIS VEITCHII.—Among our beautiful climbing vines, the *Ampelopsis veitchii* stands in the front rank; and its well-deserved popularity should cause it to be more freely planted than it is. It is a native of Japan, leaves somewhat smaller than those of the well-known American ivy, *A. quinquefolia*, overlapping one another and forming a dense sheet of green. The plant is a little tender when young, and requires slight protection the first winter. It is of rapid growth, and has the clinging nature of ivy. Its foliage is of most beautiful green in summer, changing to variegated crimson scarlet in autumn. For ornamenting brick and stone structures, it is superior to all other climbing vines. The citizens of Boston are peculiarly attached to this vine, and many of the finest structures there are made more beautiful by the addition of this plant. It cannot be too highly recommended, and will meet the fondest expectations of all who plant it.—*Country Gentleman*.

THE CROWN O' THE YEAR.

Out of my low little lattice
 I looked, and the skies were blue;
 And the gossamer robes of the Morning
 Were spangled with diamond dew;
 There were pearls on the wayside sedges,
 And gems on the hawthorn spray,
 And a scintillant rainbow shiver
 Ran over the fields and away.

A merry tom-tit was singing
 A-top of the maple tall;
 And a gadding rose, belated,
 Looked over the garden wall;
 The brooklet, astray in the meadows,
 Was piping her reedy song;
 Ah! Fair is the Spring! I echoed;
 And Summer is glad some and long!

With her lovely procession of flowers,
 Her music of bird-song and breeze,
 Her sunshine and soft tripping showers,
 And lullaby droning of bees!
 And Winter is hale and wholesome,
 With his bluster and sparkle and cheer;
 But Autumn, brown-bearded and ruddy,
 Weareth the crown o' the year!

Heir of the bountiful seasons,
 He opens his lavish hands,
 And the gold of a myriad harvests
 Is scattered about the lands!
 It rustles along the corn-rows,
 It glimmers among the sheaves,
 It mellows the red-streaked apples
 That dangle about the eaves!

Fanned by his frosty northerns,
 The wide woods kindle and blaze;
 The infinite ether above us
 Smiles down thro' a daffodil haze;
 The golden-rods light up the thickets;
 With mosses, and brambles, and ferns,
 He spreads for our footsteps a pathway
 Of glory that glitters and burns!

A luscious ripeness lingers
 Abroad in the sunny air;
 And a thousand rich aromas
 Steal on us unawares;
 Let Summer vaunt her roses,
 And Winter his princely cheer,
 But Autumn, brown and ruddy,
 Weareth the crown o' the year!

N. Y. Ledger.

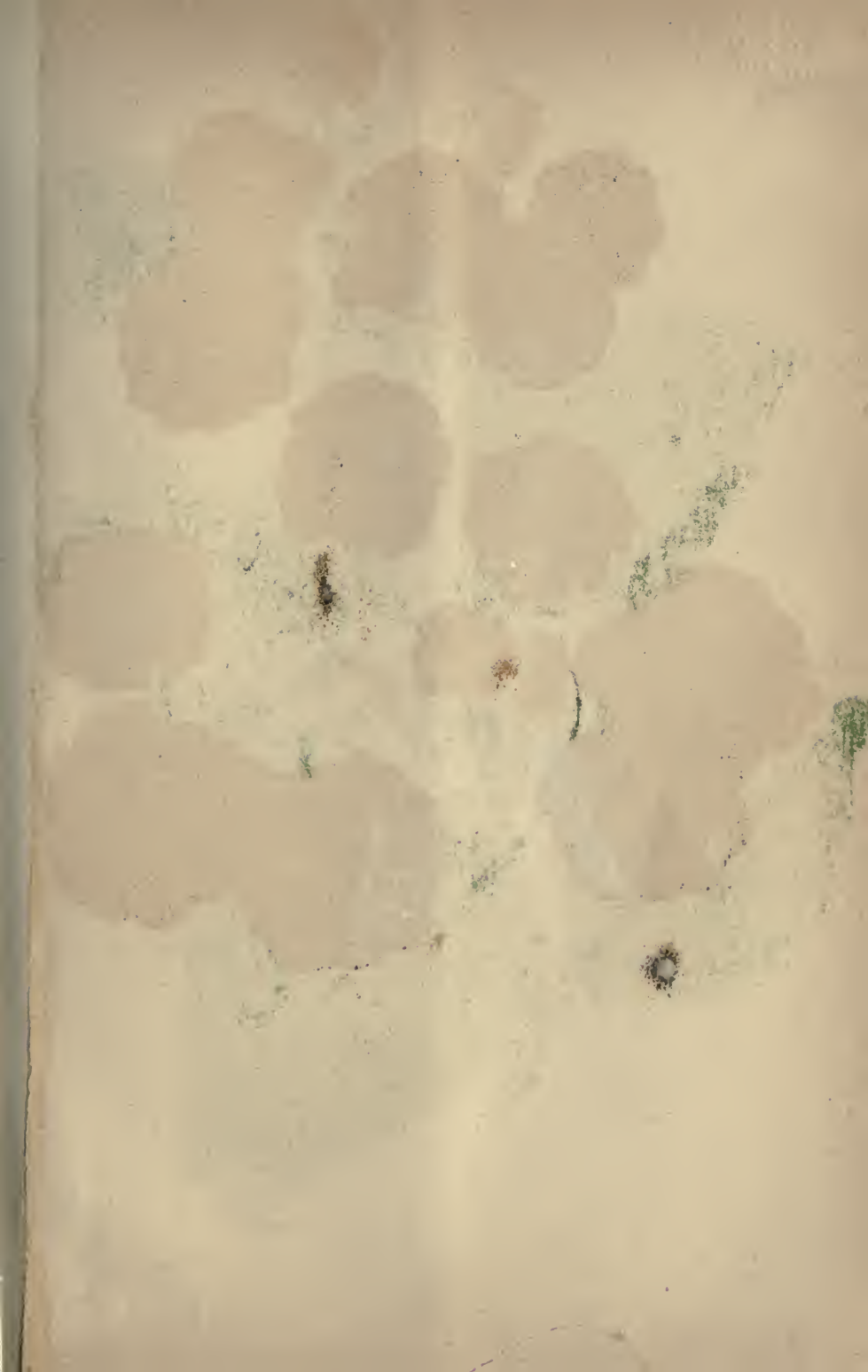
EMMA ALICE BROWNE.

CHICAGO'S PARKS.—From 125,000 to 150,000 plants are raised every year to fill the beds in Lincoln Park, Chicago. Of these about 24,000 are geraniums, 37,000 coleus, 20,000 Echiveras, and the remainder mixed plants in lots of from 1,000 to 5,000. One of the large beds in the park requires 10,000 plants to fill it; several of the baskets and vases require from 150 to 250 good sized specimens. There are four houses, each 100 x 12, and a number of cold pits or frames, in use for raising these plants.—*Michigan Farmer*.

THE RUBBER PLANT IN MEXICO.—Mexico is making a study of the culture of the rubber plant. The hardness of the plant is said to be such that its culture is exceedingly simple and inexpensive, where the climate and soil are suitable. In much of the Mexican coast region the only expense is the weeding required when the plants are young, to give them a chance to grow and strengthen.

TOBACCO JUICE VAPOR FOR PLANTS.—The vapor of tobacco juice has been tested in France as an insecticide in green houses with great success. Instead of burning or smoking the tobacco, which is a very offensive process to some persons, the tobacco is made into an extract by soaking or boiling, and the juice is then placed over a chafing dish, a fire, or the flame of an ordinary lamp, and deposited in the greenhouse or conservatory. Delicate plants which are very sensitive to smoke are not injured by this vapor, and it leaves no offensive atmosphere, while it effectually disposes of thrips, lice, scale insects, and slugs. One quart of tobacco juice vaporized in a house containing 350 cubic feet is an ample amount.—*Scientific American*.

PLUMS FOR MARKET.—At the late meeting of the Western New York Horticultural Society, R. N. Handy, of Orleans County, asked for the best market plums for an orchard of 200 or 300 trees, which he intended to set out in spring. S. D. Willard, who has had much experience with plums, said it is hard to select for others, but he would name the Lombard, Copper plum, Reine Claude de Bavay, as profitable for market. All plum trees must be well fed, or else it is better not to plant them at all. The Reine Claude de Bavay is liable to overbear, and the fruit must be timely thinned. The yellow or light-colored plums sell best. He plants his trees 12 by 16 feet apart; some of them 16 by 16. Moore's Arctic plum, from Maine, was highly spoken of for cold regions. Mr. Barry said Pond's Seedling is a valuable market sort, but a light bearer while the tree is young. The McLaughlin was commended for high quality. The Jefferson is an excellent plum, but the tree is a poor grower.





TURNER.

A hardy variety, and appears to succeed in more localities than any of the other red varieties. Canes vigorous and productive. Good in every respect.

"PRINTED FOR THE CANADIAN HORTICULTURIST."

THE Canadian Horticulturist.

VOL. VI.]

SEPTEMBER, 1883.

[No. 9.

SOME NOTES ON RASPBERRIES.

The past season has on the whole been favorable to the raspberry crop. The canes passed through the long protracted cold and ice of the past winter uninjured. This fact seems to indicate that the question of ability to endure cold is not altogether one of constitutional hardness. The canes of those varieties which we have been wont to esteem very hardy have sometimes been injured during winters much less severe and trying than the past, while the canes of sorts which we have considered as tender came through the past severe winter unharmed. There is no doubt but that the condition of the canes when winter sets in, especially the well ripened state of the wood, has much to do with its ability to endure the winter. Having passed the winter without injury, they blossomed abundantly, set their fruit well, and the moist, cool season has on the whole been favorable to the development of the fruit. In some low-lying spots the moisture has been excessive and the plants have suffered, but in well drained soil the wet weather has not caused any injury.

There are now a great many varieties of this fine fruit, and it may be that the writer's experience with those that

he has been fruiting on his grounds will be of service to those who contemplate planting either for home use or to supply the constantly increasing market demand.

Brandywine has proved to be a very prolific sort, of medium size, not high quality, of good bright color, ripening just after the Highland Hardy, and selling well in market. It seems to be susceptible of improvement in size by liberal manuring, so much so that one of the western growers has the reputation of sending an improved or fancy Brandywine to the Chicago market, for which he gets an extra price.

Caroline. This was introduced to public attention as a berry of very fine quality, as being a very near approach in that respect to Brinckle's Orange, but it has not shewn any such quality on our grounds. The plant is hardy and exceedingly productive. The berries are of good size for a cap variety, and when quite ripe resemble Brinckle's Orange in color, but there the resemblance ceases. The fruit is too soft for any but a near market.

Cuthbert. Further acquaintance with this fine variety only serves to confirm the favourable impressions made at its

first fruiting. It has so far endured our changeable winters remarkably well, and has yielded large crops of fruit. It does sucker too freely, and the grower of fruit for market will find it necessary to keep the suckers in careful subjection in order to secure large crops. The berries are large, of a good bright color, firm enough to carry well if properly handled, and sell readily. The flavor is good, reminding one of our common red raspberries.

Davidson's Thornless. An early ripening variety of black cap, valuable because it is so nearly free from the disagreeable thorns that tear our clothes, scratch our hands and lacerate our feelings. The canes are hardy and prolific. The berries are only of medium size, sweet and of fair flavor.

Franconia. This old variety is a profitable market sort when properly cultivated, and that means strong loamy soil well enriched, and the ground kept scrupulously clean. It is very productive, nearly hardy, and the fruit is of good color and carries well to a not too distant market. By nearly hardy is meant that it sometimes gets killed back by our winters, but it is not very often that the crop is materially injured from this cause.

Gregg. Thus far this is the largest black cap in cultivation, and the fruit finds a ready sale in our markets. The canes have never been injured by the winter in our grounds, and have yielded a large crop of fine fruit every season. The berries are covered with a peculiar bloom that detracts somewhat from their appearance, but their large size, meaty

pulp and good flavor have made them popular, and they usually sell for a cent or so more per quart than other black caps. The crop ripens up rapidly and is harvested in a short time.

Hansell. It is too soon to speak confidently of the qualities of this new sort, yet a few things are already settled by the first fruiting in our grounds this season; namely, it is an early ripening sort, of good color, and better in quality than the Highland Hardy or Brandywine, but whether it will prove the first to ripen is not yet ascertained, nor whether it will prove perfectly hardy here and sufficiently productive to be a paying investment.

Highland Hardy. After some years of trial of this variety one can only say that it is to be hoped that a better will yet be found to take its place. It is hardy and ripens its fruit quite early, which is of a bright color and of medium size, but seriously lacking in flavor, and yet it finds a ready sale in market because it comes in so early as to have no competitor.

Hopkins. One of the early ripening black caps, of good size, good flavor and good appearance. The fruit sells readily, being early, for the crop is all gathered before the Gregg ripens. The canes have thus far stood our winters uninjured, and have been well filled with fruit.

Niagara. Although this has not proved to be perfectly hardy, yet so far the injury has been so slight as only to affect the extremities of the canes. It bears an abundant crop of fine, large berries, of a dark crimson color, good

flavor, and that continue to ripen in succession for some time. This feature makes it especially suited for the family garden.

Philadelphia. After all, this old variety seems to me as profitable as any. The canes are the most hardy of any of the red varieties, though there have been winters in which the ends of the canes have been killed back. It is the most prolific of them all, and is bought by the canning establishments in any quantity that can be offered, and although the price obtained per quart is a cent or so less than the larger and brighter colored berries will bring in the city markets, yet the results per acre are probably in favor of this variety.

Reliance. Said to be a seedling of the Philadelphia, which it greatly resembles in the color of its fruit. The plants have not proved to be as healthy as the parent, many of them being sickly, and in consequence not producing fair samples of fruit, nor a fair quantity. The canes that are healthy are very productive, and so far have not suffered from the winter, and the fruit is similar in form to that of the Philadelphia, but larger and somewhat better flavored.

Shaffer's Colossal. Rightly named Colossal, for nothing we have seen of the cap family equals it in size of cane or berry. There are canes in our garden fully ten feet high, and yet growing. The berries are considerably larger than those of the Gregg, but instead of being black they are of a deep maroon color when ripe, very juicy and less

full of seeds than most of the black caps. The fruit is too soft to carry well to a distant market, and not of a color to sell well when offered for sale. The flavor is more acid and sprightly than most cap raspberries, and not rich, yet when cooked and slightly sweetened it is very good. Thus far the crop of fruit has not been in proportion to the growth of cane.

Solid. A black cap variety received from Illinois, fruiting for the first time. The berries are nearly as large as those of the Gregg, much more firm and less juicy, but sweet and pleasant flavored; they are indeed *solid*, and seem hard enough to carry to Liverpool without injury. The canes are strong, healthy thus far, and prolific.

Souhegan. A black cap from New England, that so far seems to be hardy and productive, and that ripens its fruit early. The berries are not as large as Gregg, yet of good size, sweet and richly flavored.

Superb, and if one may judge from the first fruiting on newly planted canes it is *superb*. The berries are large, roundish oval, rich carmine color, of excellent flavor, and apparently ripen early. We shall watch this variety with much interest, and hope to be permitted to inform our readers of its behavior another season.

Thwack. We have been disappointed in this variety. On sandy loam it has not been prolific, and the quality of the fruit is poor. We have failed to see in it any good qualities that should induce any one to plant it; perhaps on some other soil it might do better.

Turner. This is the variety that Mr. Parker Earle, President of the Mississippi Valley Horticultural Society, grows so extensively on his small-fruit farm near Cobden, Illinois. He has found it a very profitable and satisfactory market variety. The colored plate which we present to our readers with this number is a representation of this variety, which we have found to endure our winters pretty well, to yield good crops, and to have a very sweet, agreeable flavor. It throws up suckers very freely, too freely, which must be cut off with the hoe as if weeds in order to secure good crops of fruit.

Tyler. An early ripening black cap. For our part we can not see enough difference in the time of ripening of this and Hopkins, and Souhegan to make a distinction; nor in the short time that we have had them in cultivation have we been able to ascertain what are the particular points in any one of the three to give it any very decided advantage over the others.

We have said nothing of Lost Rubies, for the simple reason that in our experience of its performances we can find in it no particular excellencies that should rescue it from oblivion; it might have remained *lost* for ever and the consumers and the growers of raspberries would have experienced no loss whatever. Mr. Green writes to us that this variety is very productive when planted near Turner or Kirtland to fertilize it, but does not do so well when planted near Cuthbert, and concludes by saying that this is a great

drawback, which will prevent it from becoming popular.

MORE ABOUT NEW STRAWBERRIES.

BY T. C. ROBINSON, OWEN SOUND.

The *Manchester* has fruited with me this year, and I find it very fine indeed—for certain purposes. I do not think it good enough for home use, to be eaten directly from the vines; but I think it is of better quality than Wilson or Crescent, picked as these usually are for market; and its other points as a market fruit are so good that, with the single exception of firmness, it appears to realize to a remarkable degree the claims that were made for it. In firmness I place it behind the Wilson, yet it will no doubt ship a hundred miles or more by rail. Potted plants that I set out late last August have yielded over a pint each on the average, and the berries were much larger than I expected, very regular in shape, very glossy, smooth and handsome—decidedly late. I also saw it fruiting near St. Mary's, Ont., and near Rochester, and at both places the above characteristics were equally prominent. Everywhere, too, it was showing fine vigorous growth. My verdict on this variety is, "Best tested late market sort, for shipping less than one hundred miles." It does well on light land.

The *James Vick* is another variety that is standing well up to the claims made for it. At Rochester and St. Mary's it shows the same remarkably healthy and vigorous growth that I see on my own grounds, and it certainly is exceedingly productive. Yet I cannot recommend even the James Vick for home use at present. I have little doubt that as a cooking fruit it may prove very valuable for home use; but we have already excellent varieties that fill this bill exactly; and the "home berry" that the people are in

need of is one that in addition to other good qualities possesses size and excellent flavor. Now, the James Vick is not of extra size, and its quality strikes me as nothing better than common varieties. But for the market-grower, who wants a berry firm enough to stand the jolting and heat of a two or three hundred-mile trip on the cars, the James Vick seems to be exceedingly desirable, for it is one of the finest berries in the catalogues—excelling even Wilson in this respect. But firmness is only one essential of a market berry; we want handsome appearance, good size, and especially great productiveness; and these points seem combined in the Vick to a remarkable degree. In color it is exceedingly fine—a brilliant red, to which a shade of orange is imparted by its golden seeds. Shape, almost round, and almost as regular as if run in a mould, though of course the last berries are not as large as the first—apparently less than five per cent. being in any way deformed. Surface smooth and shining. Size, about like Wilson, or a trifle larger. Productiveness, just as great as any plant can stand without coming out of the ground. As a shipping berry for market it appears not excelled by Wilson in any respect, while in the matter of color alone it is considerably better, and it excels in others. On the whole, it impresses me as the best shipping berry to supersede the Wilson that has yet been introduced.

Bidwell has done nobly with me this year. The first berries ripened in the wet, and were ugly, overgrown, green-tipped expressions of acidity. But when our impatience to taste the Bidwell slackened, and they got more sunshine, not only did the tips ripen up, but they developed a delicious, racy sweetness of taste that delighted all who got at them, while the shape improved to the ideal form; and in color and glossi-

ness they were all that could be desired. Yet they were not up to the mark in firmness, and I do not recommend them for shipping far. Only on rich, dark loam do I think the plant will mature the immense load of fruit it sets, though the plant is a good grower anywhere. It is nearly as large as Sharpless. Plant for home use or a near market on good moist loam.

Lacon was very promising as I saw it at Rochester; and *Daniel Boone* and *Mrs. Garfield* at St. Mary's. Time will have much to tell about these. I predict a promising future.

For home use I have been delighted with *Shirts*. It is exceedingly sweet and good—surpassing even Bidwell—with the flavor of the wild strawberry, and the size and almost the productiveness of the Bidwell. It makes the most vigorous young plants of any sort on my place, and grows magnificent hills, which are easy to keep in order as it sends out few runners. Color dark and season late. *Jersey Queen* and *Triple Crown* were the only varieties on my place that could compare with *Shirts* in quality, except *Triumph de Gand*. The Triple Crown is very productive, and it is very firm, while the Jersey Queen is very large and glossy, but not sufficiently tested with me as to productiveness.

Seneca Queen keeps up its reputation with me as a magnificent early berry for home use—excelled only by Bidwell where Bidwell succeeds, but seemingly adapted to a wider range of soil.

The above seem by far the best among the new sorts that have been out long enough to test.

Of old sorts, Sharpless still stands first in size, but when it is so large it is not so sweet as when of moderate dimensions; it is certainly worthy of a place yet in the home garden. Wind-sor Chief is also very fine.

FOUNTAIN PUMP.

REPLY TO MR. STRAUCHON.

MR. EDITOR,—In the June number of the *Horticulturist* there is an enquiry by Geo. Strauchon as to a good cheap fountain pump for spraying fruit trees. I have used for the last two years the fountain pump manufactured by Josiah A. Whitman, Providence, Rhode Island, and find it an exceedingly handy, portable and efficient article. It can be had, I think, duty and express charges paid, for about \$8. I have not yet tried it on the codlin moth, but think that with its help I have effectually checkmated the "little Turk." After three applications (one a week) of Paris green water (one teaspoonful to a pail) my apricots are now as large as plums, and not a mark upon them; and with close searching I have been able to find but two plums stung by the curculio in the ten trees which constitute my plum orchard. In bygone seasons by this time plums and apricots were falling in perfect showers, notwithstanding daily jarring of the trees, and very few of either fruits eventually escaped. The exceptions then were indeed *rari nantes*. I might just add that I have found Mr. Whitman a straightforward and honorable man to deal with.

Yours, &c.,

C. R. MATTHEW.

St. Stephen's Parsonage, Goderich Township.

PRUNING RASPBERRIES.—A. F. Hofer says in the Iowa *Register*, in reference to the raspberry: "Feeble canes will bear feeble fruit, and even the strong and thrifty bush will bear inferior berries, if you let the whole cane stand as it is. Spring pruning is needed, and if you cut off your cane about one-third on top, you will raise more and better berries than if you let the whole cane stand as it is. The berries growing on the extreme ends of the branches, running out from the main stems, are always small and tasteless."

THE CLIANTHUS.

This plant, known as the "Glory Pea" of New Holland, though usually considered of somewhat difficult culture, may be easily grown if care is taken not to give too much water when young. The seeds vegetate freely, grow rapidly, then suddenly the young plants wither. If the cause is sought, it will be found that they have rotted, or "damped off," as gardeners say, just at the collar of the plant. If this can be prevented, and there is no real difficulty, the culture is very easy. The plant is a native of dry, sandy plains, and never at any period of its growth requires much surface water. The roots are long and bare, and will strike down and draw the necessary moisture from below.

Of the beauty of the plant no description can give an idea, and even the highest colored illustrations cannot exaggerate its brilliancy. The foliage is rather large, compound and vetch-like, well covering the plant, and showy. The flowers are in pendent clusters, each individual being about three inches long; they are pea-shaped, and usually of a rich scarlet color.

The seeds should be sown in rather sandy soil, in pots or in a frame, in April. If in the latter, however, it must be where the plants are to bloom, as they cannot be transplanted successfully; or they may be sown in the open border, after the ground has become warm, about the last of May. In border-culture, the essential point to be observed is that, while the plants require an abundance of water during the growing season, the utmost care is necessary to keep the neck of the stem entirely dry. When the seedlings are very small, pot each separately, or, better still, plant but one seed in each pot, and as the plants grow shift into larger pots. Never water over-head, or wet the foliage, and if the surface is

watered put a little sand round the collar of the plant. We have been most successful by not giving any surface water; but, instead, setting the pots in a pan of water, and thus supplying moisture to the root. As soon as the stem of the plant becomes woody, which it quickly does, no further care is needed.

If one can get *Clanthus* safely through the first few weeks of their growth, they are as easily grown as any plant. Set the plants out in a dry, warm, sunny spot in the garden, about the first of June. They will make bushes two to three feet in height, and be covered with splendid flowers until killed by the frost. In the greenhouse they do not thrive, as they are more subject to the attacks of red spiders than any plant, and do not like the syringing necessary to destroy that pest.

The oldest species is *C. puniceus*, which is a very showy plant; but the newer, *C. Dampieri*, far surpasses it, having larger flowers of a richer scarlet, which have a large, shining, intense black mark at the base of the petals. Of this latter species there is a variety with white flowers, somewhat varied with pink, and with the same black marking, which is very pretty, although less showy.

Let no one be deterred from planting *Clanthus* because it is "hard to grow." The only care is to avoid over-watering in the early stages of growth; otherwise the plant is of as easy culture as any other of the Bean family.—R. S. E. in *American Garden*.

RUSSIAN MULBERRY.—The Russian Mulberry has recently taken a prominent place, and owing to its hardiness and rapid growth, is in active demand for the Northern and Western States. It produces an abundance of excellent fruit, which would fully pay for all labor expended in its cultivation.—*Am. Silk and Fruit Culturist*.

LARGE STRAWBERRIES AND THEIR FLAVOR.

We have had some huge Strawberries from Mr. Gilbert (Paxtons) which were remarkably well grown and perfectly colored. Better grown they could not be, in fact; and yet the flavour, in our opinion, left something to be desired. The Strawberry is one of those things as regards which flavour is to some extent sacrificed to appearance. All who grow fruit for their own tables would do well to ask if we cannot get better flavoured fruits than those grown for the markets. Qualities which enable a market grower to carry his fruit to a place of sale are of no consequence whatever to the private grower, who should above all grow fruit for its flavour. The wholesomeness and pleasure of eating a Strawberry have very much diminished by the poor quality of many kinds. We should raise and raise fruits till we get really good ones. This plant is so easily raised from seed, and comes into bearing so quickly, that there should be no trouble in the smallest garden in trying a few experiments until the owner found a kind that suited him in flavour. It is quite common to find fruits most unwholesome by the acid they contain. There should be a revolt carried on by all owners of gardens against the ever-growing practice of sending out new kinds because they are bigger than older ones. It generally means that they are coarser; it sometimes means that they are useless. Imagine anyone growing a Kidney Bean because it was large, seeking the very quality that all avoid who have to cook or eat it. It is a delusion that those who grow their own fruits and vegetables necessarily pay more for them than they do in the market. The pleasure of having them quite fresh and of a proper age would, however, be worth paying more for were it needed. This great advantage, which all who are

happy enough to live in their gardens enjoy, might be greatly increased as follows: By a new departure, seeking and growing only things delicate and good in flavour. To grow such and gather them at the right moment, which is never done in the case of market produce, would be to experience a difference not merely in degree, but of kind. Green Peas, for example, grown thus and gathered thus would scarcely be thought of the same species as the common full-grown market "bullet."—*The Gardener*.

DRIED FRUITS MARKET.

Our market abroad for dried fruits is extending every year. We have referred to it frequently, but it can hardly be mentioned too often, and the following from the *Germantown Telegraph* is therefore in order. "It is a mistake among farmers and fruit-raisers in the United States to think that the different varieties of fruit, such as apples, pears, peaches, plums, cherries, gooseberries, etc., are grown in Europe in greater perfection than here. It is not the fact. We raise these as abundantly here, and in as much perfection, as they do in Europe, and with not more than half the labor and expense. We have not a doubt that the United States, ere many years, will become the greatest fruit-raising country in the world. In dried fruits, such as peaches and apples, the exportation has already acquired large proportions, and in ten years more it will go on multiplying in extent until fruit-raising will become a far greater and more profitable branch of industry than at present. With such a market as we find in Europe open to us we can never grow an over-abundance of apples and peaches; while these, in addition to cranberries, in their natural condition, fresh from the trees and vines, ought to be, and no doubt will be,

produced in such quantities as to meet any demand. The very cheapness that we can send them abroad for will open for us an unlimited market for all with which we can supply it."—*Press*.

ROSES PEGGED DOWN.

Each succeeding year this method of growing roses has an increased number of adherents. Those who give it a trial soon discover the advantages which it possesses. Not only does it produce a larger quantity of well developed flowers than the ordinary bush system, but in the case of perpetual flowering varieties a better succession is kept up. This latter, I find, can be secured by allowing the shoots to remain in an erect position after they have been shortened to the required length until they have broken and the young growths have attained a length of 4 inches or 5 inches, instead of pegging them down as soon as they have been pruned; when left for a time erect in this manner, they do not at once push growth the whole length of the shoots retained, in the way that occurs when immediately pegged down to a horizontal position, but break some four or half a dozen of the eyes at the points. When these have grown a few inches, as already stated, and the shoots are then pegged horizontally, it has the effect of causing the lower unbroken eyes to move and to come on three or four weeks later than those nearer the extremity, yielding quantities of fine flowers during the interval between the first bloom of the leading shoots and their successional flowering. In this way there is so much less gap in the blooming, which, it is needless to say, is a gain with those who grow Roses for ordinary purposes. One great advantage in the case of the pegging-down system is that there is no bare ground; all is covered so thickly that very few weeds appear, and in

dry weather the foliage lessens evaporation, thus reducing the quantity of water needed to keep mildew in check, as this injurious parasite in a great measure owes its presence to insufficient root moisture.—*The Garden.*

HINTS ON LAWN MAKING.

In making a lawn now, as at any other season, it is well to recollect that the work is to be done for many years, and that in no part of the grounds will thorough preparation, deep tilling of the soil, and abundant fertilizing, pay better than here. In a lawn of considerable extent, it is a mistake to suppose that it is necessary to reduce the surface to a dead level. For small grass plots, on small places, this may be desirable, but a large lawn appears to much better advantage if the surface is gently undulating. Various mixtures of seed are offered by the seedsmen. Some of these seem to be well considered, but anything more unsuited to our climate than the "French Lawn Grass" can not be imagined. Probably not a third of the kinds of grass it is said to contain will survive in our climate. The best lawns we ever had were sown with "Kentucky Blue-grass" and "Rhode Island Bent" (a variety of Red-top), in both cases a small amount of "White Clover" was added. For strong soils the former, for light and sandy ones the latter will no doubt give satisfaction. In buying grass seed for a lawn, look well to its quality. Some seed of "Kentucky Blue-grass" (the same as "June Grass") sells for twice the price of others, and is worth four times as much. Chaff does not always cover seed, and the samples should be carefully inspected. The advice to use from three to eight bushels of seed to the acre is founded upon the uncertain quality of the seed. Probably four bushels of fairly good seed would be ample. The seed should be

divided into two or four equal portions, and the sowing made, after thoroughly preparing the soil, in different directions. The seed may be brushed in, but at this season a good rolling will give a sufficient covering. Where the lawn borders on roads or paths, or on shrubbery or other plantations, it will be best to lay a margin of turf six inches or more in width. For small areas, the laying of sods is advisable, and this may be done now as well as in spring. In most localities, a common, or the road-sides, will usually afford a fine, close turf. The soil in this case should be as thoroughly prepared as for seeding, and the turf well beaten down to bring its roots in close contact with the soil. If necessary to cover steep banks, sods must be used. These may be held in place by the use of pins; plasterer's lath split is best. These will decay by the time the sod becomes well established.—*American Agriculturist.*

A GOOD PLUM CROP.

I used carbolic acid and soapsuds on my plum trees last spring, with perfect success. The curculio invariably takes the plum. Here trees are loaded with fruit, but fall to the ground before they ripen. I used one large spoonful of crude carbolic acid to one wooden bucketful of soapsuds, stirring it thoroughly and then dashing it up through the tree with a tin cup. I did this early in the morning, twice a week, commencing as soon as the blossoms begin to fall, and continued until the fruit was about half grown. They were of the Lombard variety. The trees were loaded with fruit. The first that ripened were somewhat imperfect and wormy. I also picked from two trees one wooden bucketful that was entirely rotten, after which they ripened nicely; were entirely free from worms or other blemish. I picked six wooden bucketfuls of fruit from those two trees, and they were deli-

cious. No birds or anything to disturb it while ripening. Well yes, it tempted the children.—C. PARANTEON, in *Fruit Recorder*.

A PROMISING WINTER APPLE.

Prof. J. L. Budd, of the Iowa Agricultural College, says, in referring to a new apple: "Scions and trees of an apple known as Belle de Boskoop have been distributed from the college. While far hardier and longer-lived than Ben Davis, it will not probably prove hardy enough in all parts of the north, as like the Alexander it is only a half blood Russian. Taking it all in all it is, as Charles Downing says, the most promising variety for the parts where it will prove hardy of any on our experimental list. In Eastern France, where the standard of quality is high, Simon Louis, of the great orchards and nurseries at Metz says, 'In our opinion the Belle de Boskoop is one of the most beautiful and in quality the best for table use at the close of winter.' It is equally a favorite over a large portion of Central Europe as far north as Northern Silesia, Hungary, Bohemia, and Poland. It does not bear quite as early as Ben Davis, but no variety has a better record for regular crops of even sized fruit. At this time we need an apple of fine appearance and high quality to take the place of the overgrown Ben Davis, which, aside from its low quality, is proving too short-lived in tree. I append Charles Downing's description of the fruit, whose guarded expression in relation to new fruits is well known: 'Tree vigorous spreading, comes into bearing moderately early, and produces abundantly, alternate years, of fair fruit, good size, very good quality; keeps well and is a promising variety. Fruit medium to large, roundish oblate, skin yellow, shaded with light and dark red over nearly the whole surface, some specimens more or

less mixed with russet; basin large, round, deep, slightly corrugated, flesh a little coarse, crisp, tender, juicy, brisk, sub-acid, rich, and of very good quality; core small and close, season February to April.'

"With us the apples are brighter colored than in New York and will average on young trees larger than described. At the college, which is in all respects a trying situation, I have not known it to fail to start from the terminal buds even during our recent test winters. I hope our nurserymen will propagate this variety." — *Prairie Farmer*.

THE GRAPE VINE PLUME.

A caterpillar with a very long name (*Pterophorus periscelidactylus*) works in an interesting manner upon the grape vines. About the time the third cluster is forming on a vigorous shoot the young leaves at the extremity may be found fastened together, making a cavity, in which one or more caterpillars find a retreat. The mature insect is a moth of a tawny yellow color, with a very rapid flight. The wings are split up into feather-like lobes, and on this account the insect is known as the Grape Vine Plume. The larvæ hatch soon after the grape leaves begin to expand. At first the caterpillars are nearly smooth, but after each change of skin the hairs become larger and more numerous. They feed for about a month upon the tender grape leaves, and then, fastening themselves by the hind legs to the under-side of leaves, etc., they change into the inactive or pupa state. A second brood is not known, but if there is one, it can do but little injury.

The method of treatment is hand-picking. The part attacked should usually be removed in the summer pruning or pinching, and therefore the

Plume is not very destructive. Sometimes the third cluster of grapes is included in the fold of leaves and silken threads, and if this is to be preserved, care must be taken in removing the unsightly twisted tips of the infested br. nches.—*American Agriculturist for August.*

This insect will be found in President Saunders' work at page 268, by the name of Gartered Plume Moth.

REFRIGERATOR CARS.

At the annual convention of the Master Car Builders' Association, held in Chicago in June last, a committee reported on refrigerator cars after an examination of the productions of thirteen different builders, the cars costing from \$600 to \$1,200 each. The committee said :

"There are now before the public three kinds of refrigerator cars. The first is a car built on the supposition that all that is needed is a cool temperature. These cars are built on the principle of an ice lined box, with the ends, sides, and roof fitted with ice boxes, no arrangement having been made for the circulation of air or absorption of moisture. The second kind of car is that which provides a cool temperature, and also a circulation of air. The third kind is that which provides a cold temperature and a constant circulation of air that is pure and dry. Your committee are of the opinion that the last named car meets the want of carrying perishable lading. To make a refrigerator car what it ought to be, it is our opinion that there should be a circulation of dry, pure air; the ice boxes should be exposed on all sides to the car, thus getting the cold radiation from them and allowing the air to circulate freely around them; the drainage should be perfect, so that the water would not slop over and spoil the freight; the cooling properties of the water should be utilized before escaping from the car. We think that the car should be built longer than the ordinary box car, so that after taking up space for the ice chambers, etc., there would still be

room for a full car load of freight. We would also say that the insulation should be as nearly perfect as possible."—*Scientific American.*

EXPERIMENTS WITH TOMATOES.

Many growers suppose that to have the Tomato bear early it must be planted on poor soil, and only fertilized in the hill. My experience has been just the reverse, and convinces me that the richer the soil if warm and light—the earlier the fruit. Rich soil undoubtedly increases the growth of stalk and leaf at the expense of the crop, but this otherwise wasted vitality is, by proper pruning, readily transformed into a tendency for earlier maturity.

To fully test this point, on the 20th of March, 1882, four varieties were sown. For the earliest Acme and Perfection were chosen; for the latest, Trophy and Paragon. The ground was of medium quality, thoroughly broken to a depth of ten inches, and worked until it became fine and mellow. It was then marked off in rows four feet apart; every three feet in the row a shovelful of composted manure was placed, well worked into the soil, and the plants set out in the center of these hills. In this way five rows were planted, two of them containing all four varieties, in such a way as to give a fair test.

The five rows were cultivated every three days, weather permitting, and the two containing all the varieties, after being set two weeks, were heavily top-dressed with well-kept hen manure, thoroughly mixed with the soil. All laterals or suckers were trimmed off, and at the third pruning one row was left to itself and not pruned any more during the rest of the season. Two of the five rows were only topped above the third cluster of blooms. With the exception of the row which had been

pruned but twice, and half of another, all the vines were staked.

Now, as to the results. In the two rows which had been topped, the fruit was larger than in the others, and ripened fully four days earlier. Ripe fruit was taken from the four varieties on the same day, and fifteen days in advance of those of my neighbors. The half row which was not staked did not produce as fine fruit as the rows that were; and the plants which were pruned but twice bore the poorest fruit of all, and rotted badly, but kept green longer, and bore later than any. Lifting the vines did not appear to be of any advantage.—THOS. D. BAIRD, in *American Garden*.

CATTLE IN STREETS.

A Burlington, Iowa, correspondent says: "We are still outraged in this town with roaming cattle, horses and geese. Why is it that I never see any articles in the horticultural and agricultural papers in reference to this roaming at large of stock? Why will people spend so much money for fencing out stock, instead of the owners fencing their animals in, or herding them? Millions of dollars spent for fencing, and lawsuits in reference to this relic of barbarism; consequently not much money is left for beautifying and improving the roads and streets. In journeying through life many a person wonders at the general 'cussedness' surrounding us all, in one shape or another."

When we say that this strong language is from the pen of a gentle lady, the reader will understand how badly she feels about this degrading and disgusting nuisance. It is amazing not only that the press is generally silent on this outrage; and further, we have wondered that local agricultural societies do not protest against it.—*Gardener's Monthly*.

THE ATLANTIC STRAWBERRY.

A wise man said that "of making many books there is no end, and much study is a weariness to the flesh." Had Solomon lived in our day and been editor of a horticultural periodical, trying to keep up with the introduction of new fruits, and to be able to give his readers an intelligent opinion, probably he would have burst out with the exclamation, "of making many sorts of strawberries there is no end, and the finding out of their real merits is a weariness to both flesh and spirit." Friends, can you not pause in this business? Really this is piling on the agony. We have been roused by the advent of the Bidwell, astounded by the wonders of the Manchester, thunderstruck by the claims of the James Vick, and now we stand bewildered, half dazed, with reeling senses before the wonderful qualities of this new strawberry, which has already overpowered a large body of horticulturists, and is destined to—do what? Probably, judging from the history of many another, figure in our horticultural literature for a day, and then pass to that bourne from which no traveller returns.

But this is what they say of it:—

"The strawberry novelty of the season is the Atlantic. Like the Manchester, it originated in a soil of sea sand, but unlike that variety it has perfect blossoms. While it is believed to be a good berry for the home garden (and owing to the vigorous and sturdy qualities of plant, will succeed over a wide range of country), it is of especial value for market; owing to its superior firmness, beauty, productiveness, and lateness. In quality it is more than good, its keeping properties something remarkable. At a large gathering of horticulturists held on the grounds of the originator, June 12th, to inspect the berry, all united in pronouncing it an exceedingly fine berry, and a variety of eminent promise. The commission merchant who sold the fruit stated it had

commanded from twenty to twenty-five cents per quart wholesale in New York market, and I have since been informed that the lowest price realized for it during the season was eighteen cents per quart. As evidence of its value as a market berry these figures certainly count for more than a volume of words."—*Farm and Garden*.

IMPROVED FRUIT EVAPORATOR.

This apparatus, patented by Mr. William H. Reed, of Cliffdale, Ill., consists of a reel adapted to receive in its double arms a series of fruit crates, the reel being supported on a shaft in a heating chamber, and rotated so as to bring the crates successively over the heater and to create a current of air which rapidly carries off the moisture from the fruit. The heating chamber is fitted with a ventilator at the top, and air inlets at the sides, about the shaft. The bottom of the furnace at the sides is filled in with fire-resisting clay to carry the heat of the furnace directly up to the reel without great loss by radiation. There are air supply openings with dampers at the lower part of the heating chamber for supplying the amount of air required.

The chamber may be heated in various ways, either by a furnace, or by means of a stove, or by steam. The crates which fit into the radial arms are provided with wire gauze sides, so that the air has access to all sides of the fruit as it is carried around by the reel.

The capacity of this machine may be increased by extending the shaft and adding sections to the reel. In this case the sections are geared so that any one may be stopped or revolved without interfering with the others.

This evaporator is very rapid in its operation, and produces uniform evaporation without shifting the crates, and without special attention. The reel is

revolved by suitable power or by hand.
—*Scientific American*.

CHERRIES.

The severe cold weather of last winter injured my Cherry trees, some of them severely. The old Morellos are the only ones that did not suffer. The branches of the others are killed for a distance of from one to two feet from the extremities. It is the first instance of the kind I have met with. Apples, Pears, Plums, and especially Peaches, succumb to the winters of this latitude (exactly on the fortieth parallel) but my cherries were never before injured by frost. They are upon rather high and dry ground. The lowest temperature which I noticed during the winter was twenty-eight degrees below zero. The thermometer stood at that several mornings, and for six weeks it rarely rose above zero. Several times during my residence here the mercury has sunk to twenty-six or twenty-eight degrees below zero; but it was for only a short time. Was it the long continuance rather than the severity of the cold which killed the trees? Other fruit trees in my orchards suffered much.

Those parts of the branches not killed are full of bloom, and appear to be full of vitality. The trunks are not at all injured; at least, it is not apparent if they are.

The cherry is the only fruit tree which I can recommend for shade. The tramping of stock injures all others, but it has no effect upon the hardier Cherries. They can also be planted along road-ways and paths where the passing of vehicles and animals would prove injurious to other trees. The orchardist will find this quality of the Cherry quite valuable and important, for he can plant it along the drives between his orchards.

I believe that, as a general thing,

Cherries do not receive that attention which they should. They certainly do not receive the care bestowed upon Apples, Peaches, or Plums. Like Top-sy, they just grow. Orchardists are very careful in the selection of varieties of Apples, Peaches, etc.; they prune the trees and guard against enemies, and stir and fertilize the ground. Yet very few Cherry trees receive this attention. The selection of varieties is often a matter of chance. Horticultural societies give lists of best varieties of nearly every other fruit quite frequently, but lists of Cherries are remarkable for their scarcity. A Cherry tree is stuck indifferently into the ground, and rarely pruned or manured. Yet no tree is more grateful for attention, or expresses its gratitude in a more substantial way.

The earliest Cherries are the most profitable. The first in the market bring the highest price. The earliest ripened of the early varieties are nearly worth their weight in silver. The man, therefore, that has the first ripe Cherries to sell will get the largest profits. The bloom will open earliest on trees standing on a southern slope. The rays of the sun, falling most directly upon ground sloping towards the south, will warm it earlier in the spring than ground upon which the rays fall obliquely; and the sooner the sun warms the ground the sooner the blossoms will wake to life. And from blossom to mature fruit the successive stages of development will be most rapid on the warmer soil; so that a southern slope will secure the earliest Cherries. But this entails a risk. The blossom-buds may expand too soon. Always in spring, warm and cold weather alternate for a few weeks. This period proves most destructive to the hopes of the fruit grower. The buds will lie secure and unharmed in a casing of ice during midwinter, but in the spring,

after a few warm days have made them swell, a slight frost may greatly injure them. If the Cherry grower plants his trees on a southern exposure he may overdo matters and have no early Cherries at all. My plan is to risk some trees on southern slopes, and plant the rest on high, dry ground, sloping to the north.

Cherries, both tree and fruit, have few enemies. In this they clearly have an advantage over other fruits. I would not unnecessarily draw invidious distinctions, but a proper recognition of this fact will add materially to the estimation in which Cherries are held. The only enemy of the fruit that has proved troublesome to me is the red-headed wood-pecker.

The Cherry is generally undervalued. Of our commoner orchard fruits it ranks among the highest in hardiness and fruitfulness; requires little care, and less protection from enemies; is really a luscious fruit, beautiful to look upon, and more pleasing to the palate than the eye, and loses none of its good qualities by being stewed, dried, preserved or canned.—JOHN M. STAHL, in *American Garden*.

LIMA BEANS.

This year I have tried a new plan with Lima beans. I have always planted them in rows four feet apart and the hills two feet apart in the row, setting a stake or pole and then planting four or five beans around them, manuring in the hill.

This year I run a deep furrow with a plow, then put a liberal supply of manure and worked the soil back into the furrow, mixing as thoroughly as possible with manure. I then planted my beans about 4 inches apart in the row, and the rows $3\frac{1}{2}$ feet apart. When they were up well, I stuck them the same as peas, only using longer and

heavier brush. When they reached the top of these I pinched off the running shoots, and find the beans do better. I find I can raise more beans on the same amount of ground and have less ground to hoe over that has nothing on it. I only tried the plan on a small scale this year, but shall plant my whole crop after that plan next year. Some prefer turning the eyes of the seed down when planting.—*Farm and Garden.*

THE MARLBORO' RASPBERRY.

This promising variety has recently been sold in shares to different nurserymen, in various parts of the country. We have 133 plants growing on our grounds. Who the shareholders are, we are not informed, but will be glad to hear from any of them regarding the success of the variety in their locality. We propose to give the Marlboro' a fair test, and will report its conduct without prejudice or favor. This is a novel method of introducing a new variety, and we are inclined to favor the plan. It gives the variety an opportunity to be tested in different localities before being sent out, and throws the responsibility upon the shareholders, who are now the persons to decide whether the Marlboro' has merits, and what its merits are. If it shall prove not to be superior to those already known the shareholders who send it out with great claims will alone be deemed guilty. The originator is now simply a shareholder the same as the others, and has no more responsibility than they. We know actually nothing of this berry except that the plants exhibit great vigor, but from reports of people who have seen it, and have it growing, we deem it exceedingly promising. On the grounds of the *Rural New Yorker*, Mr. Carman reports it hardy so far, and of vigorous growth. If I recollect aright Mr. Carman has said that the fruit he saw of it was of the largest size, and of

fine quality. (I make this statement only from memory—not a very safe thing to do.) Mr. Caywood had several opportunities to sell his entire right in the Marlboro' at high figures (\$4,000 in one instance we are told) but preferred the present method. That experienced nurserymen should be found willing to pay \$100 cash for a twelve quart pail full of Marlboro' plants, without its having been puffed or advertised, would seem to indicate that they have confidence in its promises.—*GREEN'S Fruit Grower.*

MANAGEMENT OF GRAPE VINES.

Grapes first coming in bearing should not be permitted to perfect large crops of fruit while young. It is excusable to fruit a bunch or so on a young vine, "just to test the kind," but no more should be permitted till the vine has age and strength. Vigorous growth and great productiveness are the antipodes of the vegetable world. Encourage as much foliage as possible on the vines, and aim to have as strong shoots at the base as at the top of the cane. This can be done by pinching out the points of the strong shoots after they have made a growth of five or six leaves. This will make the weak ones grow stronger. Young vines grow much faster over a twiggy branch, stuck in for support, than over a straight stick, as a trellis, and generally do better every way. Where extra fine bunches are desired, pinch back the shoot bearing it to about four or five leaves above the bunch. This should not be done indiscriminately with all the bunches. Too much pinching and stopping injures the production of good wood for next season. These hints are for amateurs who have a few vines on trellises; for large vineyard culture, though the same principles hold good as far as they go they will vary in their application.—*Gardener's Monthly.*

PLANTING TREES IN THE FALL.

I had my attention aroused last fall by the unusual trade in fruit trees. It was more general than in any previous fall within my recollection, and much more even than last spring. It is but a few years since nurserymen induced farmers to purchase stock for fall setting, but the practice now seems to have grown in favor with farmers generally. They only needed to ascertain that the fall is really the most convenient season for such work, in order to attend to it at that season. The trouble with spring planting is that the trees come when the farmer cannot well spare the time to attend to them. Perhaps there is a job on hand which must be finished before anything else can be attended to; the weather is warm, with drying winds, and every hour that the trees are out of the ground they suffer. When the trees are set in the fall the soil settles and fills the interstices around the roots, and the soil in the immediate vicinity of the trees becomes less susceptible to the effects of drouth.

Again, the farmer has more time to do this job, in the way it should be done, in the fall. Too much care cannot be expended in procuring and setting trees. Opinions in regard to varieties may differ, but when it comes to caring for the trees, there is only one way to do it. Too many farmers are quite apt to forget that a tree has a life and a constitution; that carelessness may destroy the one and impair the other. I think that nurserymen should be very particular in the men they employ to take up trees. I have seen so many trees injured in this respect, that I think it requires as much care to take up a tree as it does to set it out again. Strength is not the best recommendation of a man for taking up trees; neither is a faculty for handling a spade the principal accomplishment of a man employed to set out trees. Perhaps in

no other job on the farm does skill pay as well, inasmuch as unskilled labor will work so great a loss. It requires two men to set out trees to any advantage, and three are better than two. It is better to have the holes dug, and a bushel of good muck left at each hole, before commencing to set out trees.

Right here I most earnestly deprecate the post-hole style of digging holes for apple trees. A job that is worth doing at all, is worth doing well, and the roots of growing trees should have plenty of room. The hole should be dug both deeper and wider than is required, in order that a quantity of muck may be put in the bottom, and it should be dug wider on general principles. In setting out trees, when I come upon one which has been mutilated in taking up, I prefer throwing it aside and losing it at once, rather than await the doubtful result of setting it out. In setting out trees avoid placing any of the roots in a constrained position. The roots should be placed naturally, and the fine earth pressed firmly around them. With care, no one should lose one tree in one hundred, providing the trees were all right when delivered. Taking all things into consideration, I would much rather set trees in the fall than in the spring.—F. K. MORELAND, in *Country Gentleman*.

THE BARK LOUSE.

Herbert Osborn, of the Iowa Agricultural College, recommends as remedies for the scurvy bark louse and the oyster shell louse, kerosene and soap. The kerosene may be used pure where it can be done with safety, but ordinarily it must be diluted with water. This may be accomplished by forming an emulsion of kerosene and milk (skimmed milk answers well) and then diluting with about an equal quantity of water, or by shaking up a mixture of milk, kerosene and water in equal parts,

and then adding more water, taking care not to add so much as to cause the mixture to separate. Sprinkle or spray it upon the infested twigs and branches. Soap is an excellent remedy. Make a solution of whale oil soap, one-fourth of a pound of soap to a gallon of water, and apply to the infected parts of the tree, repeating the application after a few days. Lye is said to have been used with good success, but is considered unequal to soap.—*Michigan Farmer*.

PROGRESS OF COTTON SEED OIL MANUFACTURE.

Among other interesting statements by Professor Goode, United States Commissioner to the International Fisheries Exhibition, was one that the "sardine" manufacture of Maine was of a yearly value of \$825,000, the sardines being young herrings packed in cotton seed oil. At the Cotton Seed Crushers' Convention held in Chicago, June 26, 27, and 28, the president stated that there were 85 cotton seed mills in operation in this country, crushing, the last season, 554,600 tons of seed, and there were exported an average of nearly 13,000 barrels of oil yearly, each barrel having a capacity of forty-five gallons. On account of the complaints of olive oil makers in Spain, the Spanish government had imposed a duty that renders the shipment of cotton seed oil to that country unprofitable. In this country cotton seed oil is largely used for cooking purposes, taking the place of lard. It is known as "olive butter," although no attempt at concealing its actual character is made. At the convention a physician and chemist of Chicago exhibited specimens of cotton seed oil which had been deprived of its natural gluten and paraffine, and was equal to the best lubricating oil, having been tested on sewing machines and on watches. The commercial, domestic, and manufacturing value of cotton seed is

rapidly increasing. In 1876 there were only twenty-four crushing mills running in this country; now there are eighty-five, and next season there are to be one hundred and ten, even if the number of those now projected should not be increased.—*Scientific American*.

THE AMERICAN POMOLOGICAL SOCIETY.

The American Pomological Society holds its nineteenth session at Philadelphia, Pa., commencing on Wednesday, Sept. 12th, 1883, at ten o'clock a. m. All Horticultural, Pomological, Agricultural and other kindred societies, in both the United States and British Provinces, are invited to send delegations as large as they may deem expedient.

The Pennsylvania Horticultural Society will hold its annual exhibition in Horticultural Hall at the time of this meeting.

A limited number of Wilder medals will be awarded to objects of special merit.

It is to be hoped that Canada will be well represented on this occasion.

PARIS GREEN ON GRAPE VINES.

We must confess ourselves in being duped this spring by acting too hastily on the experience of others given in the *Country Gentleman*, concerning the destruction of the rose bug, the pest of the grapes. The advice was to get a Johnson's pump and squirt some Paris Green water (the same strength as for potatoe bugs) on the grape vines, and that it would kill the rose bugs on the vines as effectually as the potatoe bug on the potatoe vines. We procured a pump and tried the experiment, the spray being as fine as rain. The first application did not stop the ravages of the bug, so we tried it the second time, result, not a complete extermination of the bug, but an almost complete ex-

termination of the grape blossom, grape and also the leaf. Luckily we had sense enough to try it on only a very few vines, and did not do much mischief.—*The Farmer's Companion*.

NEW FRUITS.

CRESCENT SEEDLING STRAWBERRY.

A correspondent of the *Country Gentleman*, residing in Belmont County, Ohio, says :—The Crescent has done so well the past unfavorable season (as well as for two years before), that we unhesitatingly claim for it a place in the front rank for market. I had one-eighth of an acre of them last season, and could not boast of the culture or the soil, but it gave me 25 bushels of marketable berries, which chiefly went to Chicago, and sold at wholesale at \$4 to \$6 50 per bushel. My neighbors, with Wilson, C. Downing and other sorts, got only 50 to 75 bushels per acre. Since Crescent has been very highly praised by some, and quite the reverse by others, I will add that when first colored the quality is not first-rate, but let it get fully ripe and there is nothing on the list which has so much of the real strawberry flavor, and I think it is excellent when fully ripe. It carries its size better through the season (in this locality) than Wilson, Chas. Downing, Monarch of the West, &c., which is a great recommendation.

CUMBERLAND TRIUMPH STRAWBERRY.

The same gentleman says of this berry :—Cumberland Triumph is also very valuable with us. Many growers claim that it is suitable only for near market, but I have shipped it to Chicago (between 400 and 500 miles), and sold it at wholesale at 30c. per quart, or \$9 60 per bushel. I have also exhibited it alongside of Jucunda, as the best strawberry, size and beauty to rule, and always carried off the prize. I am testing many of the newer varieties,

but do not feel very much in need while the two named above do so well. I also had Glendale and Sharpless fruit in a small way last season, and hope they may do well, but Crescent ripens first and lasts longer than any other.

GREGG RASPBERRY.

While on the subject of new fruits, I cannot omit to mention the Gregg Raspberry, which has held so important a position of late years in the culture of this favorite fruit. For late ripening we certainly will not very soon see it superseded. I will still plant Doo-little for early till some of the new ones prove a claim to that position.

CULTIVATION OF POTATOES.

It is always well to plant early, as early as possible in our climate, on well prepared soil having good drainage, whether early or late sorts. Properly managed and attended to, the chances are for more moisture and more coolness; and, for safety against the frost and dry weather of spring, put well down in the mellow soil—at least six inches deep, and deeper in sandy loam. This will prevent the seed, however small, from drying out, and sprouting will go on there instead of in the cellar, the tips appearing when the danger from frost is over, and at the time potatoes are usually planted, thus getting a start of weeds, and maturing the crop early, about the middle or latter part of June, before drouth has penetrated deeply. By this time the late sorts will be well established, occupying with their roots and young tubers the lower, cooler soil weeks in advance of the usual planting, and ripening so much the earlier, thus avoiding drouth and frost, which often make serious work with belated potatoes. Deep planting requires deep working and enrichment of the soil, so as to have the seed in rich, mellow ground, not dropped on

the bottom of the furrow on the hard, raw sub-soil, and covered with the plow, as is often done. The roots want to penetrate downward as well as laterally. This puts them beyond the reach of severe drouth. If, in addition, the surface of the soil is kept stirred so as to form a fine mulch, a superior crop is assured every season, if the soil has good drainage so as to carry off the water in a wet season.

The objection to deep planting, that it is more expensive to harvest the crop, holds good as far as the digging is concerned, but it is in no way an offset to the other advantages of a larger, sounder and more uniform crop, take one season with another, drouth having much less effect. The greater freedom from disease, which result is a point that can hardly be overestimated in view of the widespread, unsound condition of the tubers, for there is less chance for rot with deep planting in well-drained soil, the tubers being further down and better protected—at least there is greater success.—*Country Gentleman*.

CRAB APPLES.

When eternal vigilance is the price of an apple orchard, and Jack Frost the most formidable enemy encountered, the Crab Apple is of no small value. The past winter was unusually cold here, injuring even cherry trees, but my Crab Apples escaped unscathed. They are the only fruit trees that were not injured. The Crab Apple not only withstands cold better, but is hardier in every way than the apple, and therefore will commend itself to the orchardist living where the circumstances are not favorable to apples. Though only a crab apple it is a fine fruit. I know of no fruit which makes nicer preserves or jelly. The jelly is as clear as crystal and only too pleasant to the taste.

The trees are incessant bearers; I

have never known them to miss a crop, and a heavy one at that.—*Am. Garden*.

THE SOUHEGAN RASPBERRY.

It is a chance seedling, found some ten years ago in the garden of Mr. John A. Carleton, Hillsboro' County, N. H., and from the growth of cane and general appearance of the fruit, he thinks it is a seedling of the Doolittle, but at best this is a mere matter of speculation. It takes its name Souhegan from a small river of that name near where it originated.

The canes are very strong and vigorous, branching quite freely, and well covered with strong, sharp spines, and, so far as I have seen, it is perfectly hardy. In fact, it is the only black cap that was not injured the past very severe winter on our grounds. We fruited about one acre of them the past season in the same field with one-fourth of an acre of Doolittle, set at the same time and given the same care and cultivation. The Souhegan ripened one week in advance of Doolittle; the fruit was a little larger, of jet black color and fully twice as productive. It was so very early that the first pickings were sent to market along with the last of the strawberries, just at a time when fruit was scarce in market, and therefore sold at the very highest price—25 cents per quart for the first few days, thence down to 15 cents for the last few pickings. Doolittles sold from 15 cents down to 10 cents, and while that is a good price, from 15 to 25 cents is a much better one; therefore we shall grow no more Doolittles, but next spring plant several acres of Souhegan in addition to the three acres now growing.

We gave up the Mammoth Cluster two years ago, planting the Gregg in its place, as it is by far the best and most profitable late variety. The Centennial

we received two years ago from Missouri. It has a very strong growing cane; not quite hardy the past winter; very prolific; berries large, jet black color, good quality, and ripens four or five days after Souhegan.—J. H. HALE, in *Country Gentleman*.

Mr. Chas. A. Green, in same paper, says:—I had it in full bearing this season, and it distinguished itself as a formidable rival to all other varieties. It is perfectly hardy here (Monroe County, N. Y.,) remarkably vigorous and productive, is earlier than Doolittle, and is of superior quality. In size it approaches the Gregg very closely. It is one of the few shining jet black varieties, without bloom, which gives it a fine appearance. It will, however, dry away more than Gregg, being more juicy, and will not endure shipment so well.

SCRAPING TREES.

Do we approve of scraping trees? asks a friend of ours. Certainly we do, provided they need it, and one can rarely find an old tree that does not. Aside from the fact that the removal of the old bark scales breaks up a refuge for various insects, including the woolly-aphis, the increased beauty of the tree repays the trouble. There are scrapers made for the purpose; one of these has a triangular blade, another a long blade with one flat and another slightly concave edge. An old hoe is quite as good a tool as any; cut off the handle to about 18 inches, and do not grind the blade too sharp, as a cutting implement is not needed—only a scraper. On a very old trunk some force may be needed to detach the scales that are partly loose, but on young trees be careful not to wound the healthy bark. The scraping may be done now, next month, or later. When there comes a moist, drizzly spell, go over the scraped

bark with good soft soap, made thin enough with water to apply with a brush. Paint over a thin coat of this soap and leave the rest to the rains. Later in the season the trees will appear as if furnished with mahogany trunks. *American Agriculturist*.

THE DOYENNE D'ETE.

A. B. Allen, in the *N. Y. Tribune*, thus descants on the good qualities of one of our summer pears.

"The Doyenne d'Ete or summer Doyenne, is one of the earliest, and I am confident if farmers knew now hardy, thrifty and quick-bearing it is, every one of them who care in the least for good fruit would immediately set a few trees.

"This summer pear begins to bear the year after being set out, if the trees are then four to five feet high, and they bear more or less every year after. Some of my trees, only nine to eleven feet high, and with about the same width of branch, had from 600 to 800 pears set on them the past spring. They hung upon the branches like currants or gooseberries. After about a month old I cut off one-half of these, and even then when full grown they touched each other. The fruit in early seasons begins to ripen the middle of July, later seasons 20th to 25th, and continues one month. If picked just before ripening and set in a dark closet, or put into a box and placed in the ice house, it can be kept several weeks longer. The pears are of a roundish obovate shape, one and a half to two inches long, and the same in diameter in its broadest part. It is yellow on one side and a bright pink on the other—very pretty to look at. The flesh is white, tender and juicy—in fact, almost melts in the mouth when eaten at the exact time of ripening. The Doyenne d'Ete comes in the season when such fruit is in request,

and it sells readily in the market. I would recommend its growth particularly to those farmers who entertain summer boarders, for they will find it an excellent supplement to the smaller fruits, such as raspberries, blackberries and whortleberries."

A NEW ENEMY TO THE CELERY.

The *Germantown Telegraph* gives the following description of a worm which has attacked the celery crop of that vicinity, and believes it identical with the corn worm (*Heliothis armiger*) which is ravaging Western corn fields. No remedy has as yet been found for its depredations:

"For the first time noticed in this section the growing celery plant is being attacked and seriously injured by a rather singular looking worm, belonging to the 'measuring' family. It is of a greenish color, hairless, ranging from a half inch to over an inch and a half in length. When it reaches its greatest length it is almost transparent. It is a ravenous devourer; and, while it apparently prefers the celery, it is not particular in its diet, and will attack even the leaf of the ruta-baga. In some celery beds it appears in thousands and eats into the stem to such an extent as it is believed will utterly destroy the plant for culinary purposes."

GRAPE GROWING IN CALIFORNIA FOR THE EASTERN MARKETS.

At a ranche where grapes are grown for raisins, and for shipment East, the process is as follows: Around a long, narrow table some fifteen Mongolians are seated, busily engaged cutting the poor and withered grapes from each bunch. The fruit is then handed to the packers, several in number, who place them in small boxes, four of which fill a crate. Each box is made to hold one bunch of grapes and each bunch will average in weight five pounds. The grapes sent

East are a beautiful variety of the white grape, known as the Tokay variety. They are large and firm and possess a delicious flavor. As the flesh is hard and comparatively dry, they will keep well and are successfully shipped East, as fast freight, if properly packed. The crates and boxes are made especially for long distance shipping purposes and possess many ingenious features. To ship grapes East by fast freight from Sacramento to Chicago costs nearly \$1,000 per car, yet in spite of this enormous expense, added to the cost of raising, picking and packing fruit, the venture is found to be exceedingly profitable.

THE APPLE APHIS.

This little but very injurious insect has been very abundant of late, and many fruit growers have been annoyed and perplexed by their presence in such unusual numbers.

For their benefit we give them what our president says of them in his most excellent work on "Insects Injurious to Fruits," which should be in the hands of every one of our readers:—

"During the winter there may be found in the crevices and cracks of the bark of the twigs of apple trees, and also about the base of the buds, a number of very minute, oval, shining black eggs. These are the eggs of the apple tree aphis, known also as apple leaf aphis, *Aphis malifoliae* (Fitch). They are deposited in the autumn, and when first laid are of a light yellow or green color, but gradually become darker and finally black.

"As soon as the buds begin to expand in the spring, these eggs hatch into tiny lice, which locate themselves upon the swelling buds and the small, tender leaves, and inserting their beaks feed on the juices. All the lice thus hatched at this period of the year are

females, and reach maturity in ten or twelve days, when they commence to give birth to living young, producing about two daily for two or three weeks, after which the older ones die. The young locate themselves about their parents as closely as they can stow themselves, and they also mature and become mothers in ten or twelve days, and are as prolific as their predecessors.

"The leaves of trees infested by these insects become distorted and twisted backwards, often with their tips pressing against the twig from which they grow, and they thus form a covering for the aphides, protecting them from the rain. An infested tree may be distinguished some distance by the bending back of the leaves and young twigs. It is stated that the scab on the fruit of the apple tree often owes its origin to the punctures of these plant lice. This species, which was originally imported from Europe, is now found in apple orchards all over the United States and Canada.

Remedies.—Scraping the dead bark off the trees during winter, and washing them with a solution of soft soap and soda, would be beneficial by destroying the eggs. Syringing the trees about the time the buds are bursting, with strong soap-suds and weak lye, or tobacco water, the latter made by boiling one pound of the rough stems or leaves in a gallon of water, will destroy a large number of the young lice. A frost occurring after a few days of warm weather will kill millions of them; in the egg state the insects can endure any amount of frost, but the young aphids quickly perishes when the temperature falls below the freezing point."

The author describes a number of parasites which feed upon and destroy the aphids; nine species of the Lady-bird are described and figured; also Lace-winged or Golden-eyed Flies, and the larvæ of the Syrphus flies. The

latter were frequently found on the lice infested leaves, last season, and were supposed by many to be the real cause of the destruction of the fruit.

ROOT PRUNING.

The experiments were made on the apple and pear. A vigorous apple tree, eight or ten years old, which had scarcely made any fruit buds, has done best when about half the roots were cut in one season and half three years later, going half way round on opposite sides in one year and finishing at the next pruning, working two feet underneath to sever downward roots. It has always answered well also to cut from such trees all the larger and longer roots about two and a half feet from the stem, leaving the smaller and weaker ones longer and going half way round, as already stated. The operation was repeated three or four years later by extending the cut circle a foot or two further away from the tree. By this operation unproductive fruit trees became thickly studded with fruit spurs, and afterwards bore profusely. The shortening of the roots has been continued in these experiments for twenty years with much success, the circle of roots remaining greatly circumscribed. The best time for the work has been found to be in the latter part of August and the beginning of September, when growth has nearly ceased and while the leaves are yet on the trees.—*London Garden.*

BAGGING TOMATOES.—Mr. E. S. Carman, of the *Rural New Yorker*, experimented last season with bagging tomatoes, and found that those so treated were the most brilliantly colored, and when cooked the least acid tomatoes he had ever seen or eaten. It was also observed that the bagged tomatoes ripened more evenly, and about the stem as well as elsewhere. Against the rot, however, bagging afforded no protection.

MISCELLANEOUS ITEMS.

CALIFORNIA PRUNES.—Prune culture is a great success in the uplands of California. Nothing can exceed this fruit in weight and production. In Petaluma every branch is loaded, and every prune sound. The pits are extracted by machinery and used for fuel. So rich and juicy are the California prunes as to drive the German prunes from the market whenever placed in competition. Each tree bears about 100 lbs. of prunes, worth 14 cents per pound at wholesale. One hundred trees are planted to the acre, and the entire cost to pit them for the market is five cents per pound.

THE HARVEST BERRY.—The early Harvest Blackberry is making friends this year. It commences to ripen considerably earlier than the Wilson and presents a peculiar glossy, varnished appearance; jet black and very attractive. Very little rust has as yet made itself visible on this variety. The plant naturally tends to a branched form and is prolific in yield. The heavy rains of the past spring have shortened the crop greatly. The plant is so easily trained that it forms the best variety here for garden cultivation, and probably for the field, also.—*Farmer and Fruit Grower*.

A NABOTH'S VINEYARD.—England's wealthiest baronet is said to be Sir John Ramsden, of Byram, Yorkshire. His rent-roll is computed at \$850,000 a year. He owns almost the whole of Huddersfield, the great manufacturing centre. The little bit he doesn't own was a very Naboth's vineyard to his father, who, according to popular tradition, once offered to its Quaker owner to cover it with sovereigns if he would sell it. "Edgewise, friend Ramsden?" quoth the Quaker. "In that case it is thine; otherwise all Huddersfield must still belong to thee and me." "Edgewise" was more than the baronet could swallow.—*American Garden*.

WASH FOR TREES.—A wash which is highly recommended for trees is made as follows: Take one bushel of lump, fresh burnt lime, ten pounds of common sulphur (rock sulphur), ten pounds of common salt in water, tub to hold from thirty to forty gallons, then add from twenty to

twenty-five gallons of boiling water, cover over; when cold, brush it on with a whitewash brush, brushing into every crevice of the bark of the trees. It is said to be the best and cheapest disinfectant for all kinds of buildings where animal life is located; all the inside of cattle pens, railway cars, and cattle cars should be disinfected with it; it will prevent contagion, killing all germ animals, and prevent the eggs germinating.—*Prairie Farmer*.

THE QUINCE.—The fact that the quince will live and give fair returns under the most adverse conditions, has created the impression that it does best under neglect. No tree responds more promptly to good treatment, and none, if given half a chance, is more profitable. Quince trees when young need care to bring them into proper shape. They should be trained to form a single trunk, and may at first need some care to prevent their making clumps instead of trees. After they are well established they bear yearly, and their fruit is always in demand, and usually at good prices. It should not be forgotten that the quince is a highly ornamental tree, both in flower and when loaded with its golden fruit, and may be planted both for ornament and profit.—*American Agriculturist*.

GOOSEBERRIES.—Large and early gooseberries command very good prices in the spring, as they are about the first "pie material" which makes its appearance. Another advantage in favor of this fruit is that it brings in *early money*, which is quite an item to most cultivators of the soil who usually have to wait until midsummer for their first dividends from the farm. We would not advise planting largely, but a patch of a half acre will, if cared for as it should be, bring in a very satisfactory profit. The Gooseberry requires strong, rich soil, and should be well manured each spring. It should be thoroughly and constantly cultivated (except when in bloom), and the bushes must be pruned each season, so as to encourage new and vigorous shoots, as it is only on such wood that the finest fruit is produced. The Houghton seedling has done well with us as a market sort.—*Farm and Garden*.

FROM AN ALBUM.

We may write our names in albums ;
 We may trace them in the sand ;
 We may chisel them in marble
 With a firm and skillful hand ;
 But the pages soon are sullied,
 Soon each name will fade away ;
 Every monument will crumble,
 Like all earthy hopes, decay.
 But, dear friend, there is an album,
 Full of leaves of sunny white,
 Where no name is ever tarnished,
 But forever pure and bright,
 In that Book of Life, God's Album,
 May your name be penned with care ;
 And may all who here may write,
 Have their names forever there.

WHAT SEED SHALL WE SOW ?

A wonderful thing is seed,
 The one thing deathless forever !
 The one thing changeless—utterly true,
 Forever old and forever new,
 And fickle and faithless never.

Plant blessings, blessings will bloom ;
 Plant hate, and hate will grow ?
 You can sow to-day, to-morrow will bring
 The blossom that proves what sort of thing
 Is the seed, the seed that you sow.

Ladies' Floral Cabinet.

LAYING TURF IN SUMMER.—Mr. Henderson says : “ I find that turf can be successfully laid down, if necessary, in dry and hot summer weather, by simply covering it when finished, before it gets too dry, with about a quarter of an inch of light soil put through a half inch sieve. The grass begins to grow through the soil in a very few days.”—*Scientific American.*

THE CABBAGE WORM.—We find the following remedy for the ravages of the cabbage worm in one of our exchanges. Have any of our readers any experience of its efficiency. If so, they will confer a favor by giving us their opinion of its value :—“ Pyrethrum, or Persian powder, possesses the qualities of destroying cabbage worm life and at the same time leaves the cabbage in a healthy condition.”

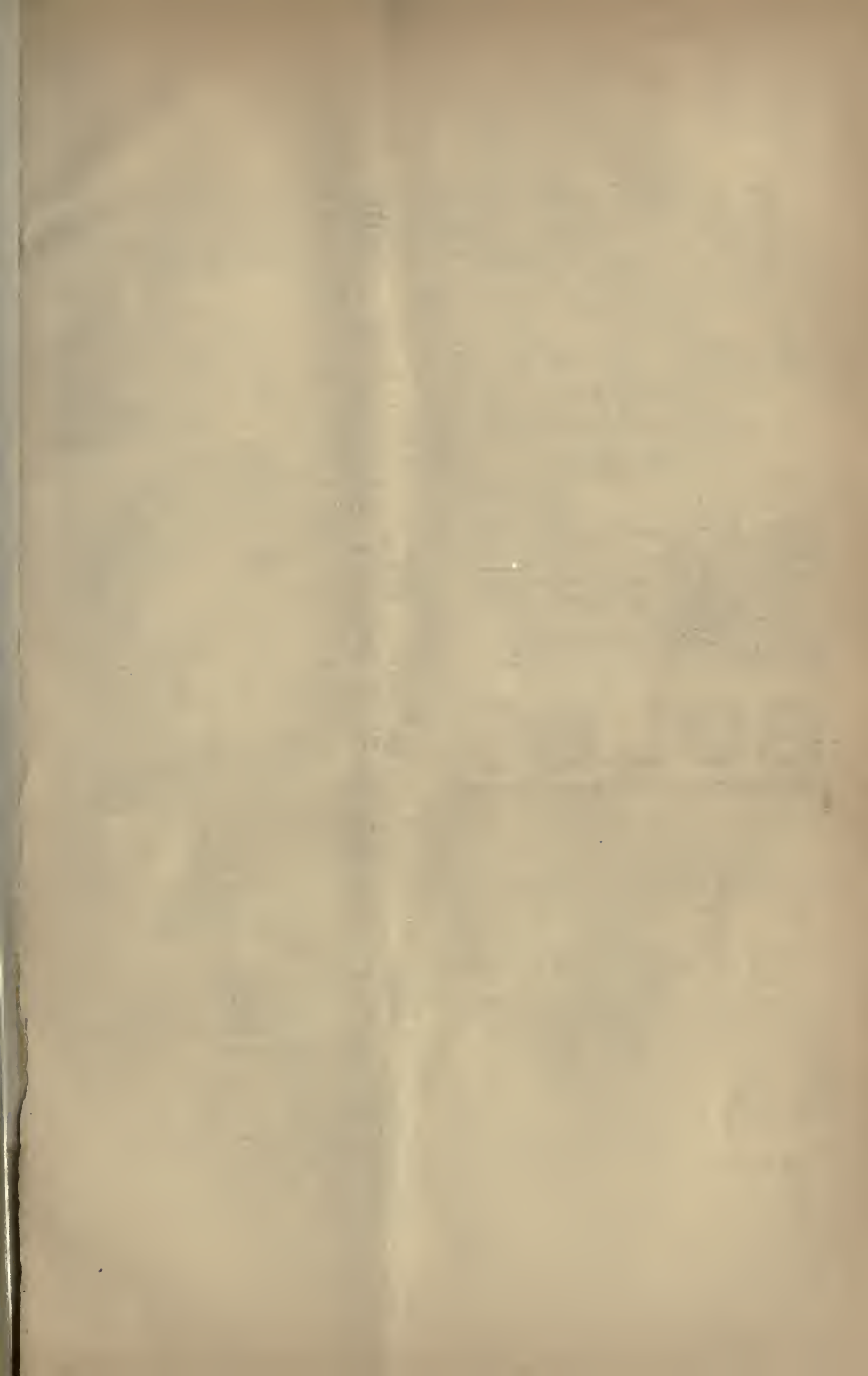
WANTED, A GOOD EARLY PEACH.—The Illinois growers of early peaches wear long faces this summer. The object of their hopes and fond anticipations has fallen to the ground in a shower of rotten fruit. The crop was a delusion. Inquiries for an early peach that does not rot are now frequent. If anyone knows of such a peach they will confer a great favor

by making known its name.—*The Farmer and Fruit Grower.*

KEEPING GRAPES FOR WINTER USE.—Mr. Nelson Ritter, Syracuse, N. Y., has had admirable success with packing grapes in single layers, in small, shallow boxes about two inches in depth, with sliding covers. When he packs fruit two layers deep he places paper between the layers, the same as advised by Mr. Husmann. Mr. Ritter has found the Isabella, Catawba and Clinton to be the best keepers, while Salem and Diana have proven fair keepers.

ABOUT STRAWBERRIES.—The *Western Farmer* says :—“ A Southern amateur gardener secured slabs from the saw-mill and bored two-inch holes in them fifteen inches apart and laid them round side up on the edge of some beds, and set a strawberry plant in each hole in August. Such a profusion of strawberries as he had was a sight worth beholding. When other strawberries in the neighborhood were all dried up by the drought his were in perfection. A half pint or more were taken at a time from each plant. It was but little trouble to keep the runners down. But the next season the plants crowded in the hole so closely that the crop was a failure.”

PACKING APPLES FOR SHIPMENT.—A paper read before the Nova Scotia Fruit Growers' Association, gave some valuable suggestions on packing apples. A vast improvement is stated to have been made in the past season over previous ones. Careful assorting is insisted on. In one case, in a consignment of 300 barrels to England, the first and second sizes were not separated, and the result was \$1 less per barrel than others of the same quality which were assorted. Hardwood barrels are found much the best, both on account of strength and the apples shrinking less. Wrapping the specimens in paper has done well, but is attended with too much labor for general practice. Lining the barrels with white paper has been satisfactory. The experiments with packing in chaff and cut-straw have signally failed. The varieties which have done best for the English markets have been Gravenstein, Ribston Pippin, Pomme Grise, Baldwin, Spitzenburgh and Russet.—*Country Gentleman.*





THE Canadian Horticulturist.

VOL. VI.]

OCTOBER, 1883.

[No. 10.]

HARDY HERBACEOUS PLANTS.

There are many very beautiful hardy plants that can be grown in the flower border which require but little attention as compared with the growing of annuals, and yet one seldom finds them even in the gardens of those who are fond of flowers. One of these hardy plants is shown in the colored plate that adorns this number. It is the *Dicentra Spectabilis*, the Chinese counterpart of one of our native wild-wood flowers which is commonly known by the name of Dutchman's breeches. This showy flower was introduced into this country many years ago, creating a great sensation on its first arrival and selling at very high prices. It is not only very hardy, but yields more and finer flowers if kept in the open ground over the winter, exposed to hard freezing than if kept in a place free from frost. Those who plant it in pots for early spring forcing have learned that in order to the best results for forcing purposes, it is necessary to expose the plants to severe freezing.

In the older horticultural works this plant will be found described under the name of *Dielytra Spectabilis*. It was found by Mr. Fortune in the gardens in northern China, and sent by him in

the spring of 1846 to the London Horticultural Society, England, and esteemed at that time the most brilliant hardy plant added to our collections for many years. It flowers in the spring, the stalks rising to a height of about two feet, with flower spikes from six to eight inches in length, which hang gracefully curved to one side. It delights in a rich loamy soil, where it will soon form a large plant, which, if desired, may be divided very early in the spring as the buds begin to appear above the surface, and thus the number of plants increased.

Its graceful style of growth, combined with the brilliant coloring and unusual form of its flowers, and its perfect adaptation to our Canadian climate, make it worthy of a place in every cottage garden of the land.

The blue flower which is shown in the colored plate is a very fine variety of the *Heliotrope*, which is so universally admired for its delicious perfume. It is not a hardy plant, and therefore must be brought into the house on the approach of frosts. It will grow well in the kitchen window provided it be not allowed to freeze on cold nights. During the summer it can be planted

out in the open border, and lovely blue flowers freely cut for bouquets.

DWARF PEAR TREES.

I have about thirty dwarf pear trees whose leaves, after turning brown, have all fallen off and fresh foliage formed. The bark is not at all affected.

1. Will the trees die, or can they be saved, and how?

Will the *Horticulturist* kindly reply in the next issue?

2. Also, if the Clematis can be propagated by cuttings? R.

Toronto, 13th August, 1883.

1. It is impossible to tell whether the pear trees will die or not. The formation of fresh foliage gives ground for the hope that they will survive.

2. Clematis does not grow readily from cuttings, but does well layered.—Ed.

TO THE EDITOR OF THE CANADIAN HORTICULTURIST.

MR. EDITOR,—Is the wild cucumber, *Echinocystis lobata*, poisonous? It is an annual. The leaves resemble the leaves of the cucumber of our gardens, but are more indented. The flowers are white formed on sprays. The fruit or pod is oval and covered with prickles. The plant is a rapid growing creeper. The seeds are similar to those of the water-melon.

Yours truly, F. G. B.

Ottawa, Sept. 14, 1883.

REPLY.—Not being familiar with the plant, we referred the question to Wm. Saunders, Esq., of London, an able chemist and botanist, to which he replies as follows:—"I have not been able to find in any book in my possession anything relating to the physiological action of the *Echinocystis lobata*,

but since it is closely related to the squirting cucumber, *Ecbatium officianum*, from which Elaterium is prepared, one of the most violent drastic cathartics known, I should expect that it would act violently on the bowels if any of the fruit was swallowed, producing abundant and watery stools."

Prof. Asa Gray, in his Manual of Botany, gives Wild Balsam Apple as the common name of this plant.

ALUM FOR CURRANT WORMS.

TO THE EDITOR OF THE CANADIAN HORTICULTURIST.

MR. EDITOR,—In answer to Mr. J. Savage's inquiry as to how to make and apply the alum water, I took the receipt from page 4, January number. The solution is one pound of alum dissolved in three gallons of rain water. The mode of proceeding is to dissolve the alum in a small quantity of water, then add sufficient water to make three gallons. When cold, put in a common watering pot with a rose spout and sprinkle the currant bushes as soon as the worms appear, at first for two or three days every morning, and then once or twice a week will keep them clean, or at least did mine.

Yours truly,

O. H. WEBBER.

Hamilton, Sept. 20, 1883.

SIZE OF JAMES VICK.

Mr. A. M. Purdy writes to us as follows: "Pardon me, but six such large berries as you show for James Vick could not be found on any plantation of that sort. Mine were not half that size."

We supposed that Mr. D. M. Dewey, of Rochester, N.Y., under whose supervision the coloured plate of James Vick was printed for our August number, had such a reputation for accuracy in these matters that no one could challenge his representations.

SUMMER MEETING OF THE FRUIT GROWERS' ASSOCIATION OF ONTARIO.

For "Canadian Horticulturist."

MR. EDITOR,—On Monday, August 27th, my friend, W. W. Hilborn, and I, boarded the noon train at Watford, for St. Catharines, to attend the summer meeting of above Society. We safely arrived at our destination in the evening of the same day, after a very pleasant transit through an exceedingly fine and promising country in the midst of a Canadian harvest. The weather was exceedingly pleasureable, and the fruit trees through which we passed, though, as a general thing, not loaded with fruit, yet they studded the landscape and added beauty and a charm to the ever-changing scene. It is not possible to travel any considerable distance into the heart of our country without being convinced of the greatness awaiting it in its coming grandeur of development.

The following day we spent in the city, and by the assistance of kind friends visited many beautiful and charming places. We first called at the private gardens of the Hon. T. R. Merritt, whose gardener, Mr. Cameron, took us under his care, and led us through the varied and beautiful scenes of the garden. Everything was in the best of condition, and commanded our highest admiration. The large and varied beds of gay flowering and foliage plants were perfectly beautiful. In the fruit garden the loaded trees of beautiful and well-formed pears and plums, and trellises of grapes, were something to excite our deepest astonishment—such quantities and such beautiful and perfect specimens. In the graperies the large and beautiful clusters of foreign grapes, suspended above us, were something truly admirable. In the lawn the old and beautiful Norway Spruce, Balsam Fir, and other ornamental

trees, were exceedingly fine. Such grounds as these are not only the pride of the owner, but the admiration of the people, and a blessing to the country.

We next visited the home grounds of John Riordon, Esq., whose gardener, Mr. Dunn, also very kindly showed us some wonders of his skill in planting and training. He first took us into the graperies under glass, where fine Black Hamburgs, and luscious Muscats were hanging in enormous clusters over our heads. These beautiful grounds are perfectly charming. The conservatory, a large glass structure filled with noble Palms and many other exotics from far southern climes, was one of the most delightful places we had ever seen. The lawn was well supplied with fine old specimen trees of varied habits and foliage, intermixed with beds of the richest color in flowering and foliage plants. In the fruit garden we were also shown beautiful fruits, all that the heart of man could desire.

We also visited the nursery grounds and private gardens of D. W. Beadle, Esq., the industrious Secretary of the Ontario Fruit Growers' Association. These grounds are on the very site where the old St. Catharines nurseries were first established by Dr. Beadle, the venerable father of the present esteemed owner. These admirable grounds are very extensive and well located, and are covered over with trees, plants and flowers of almost every conceivable pattern. The soil is admirably adapted to the purpose to which it is put, the growth of the trees and the nursery business.

We afterwards visited the celebrated Dominion Gardens of A. M. Smith, Esq., whose grounds are so widely known as the birth-place of the Early Canada Strawberry, and the Niagara Raspberry. Here we saw growing, the wonderful Niagara Grape that is now agitating the whole country so much

It is a most beautiful and promising white grape, and is owned by a company at Lockport, N. Y., but is restricted so that we cannot get it. St. Catharines is a wonderful point of interest in Canadian Horticulture, and is, to us, the Rochester of Canada, and well repays the visitor. The Fruit Growers' Association meeting was very interesting, being well attended by the citizens and others. The discussions were varied, interesting, and lively, and many items of importance taken up. Lasting as it did for two days, much valuable and efficient work was done. The questions mainly relating to fruits and fruit-growing in kinds and methods, especially Raspberries, Currants, Strawberries, Gooseberries and Blackberries; also Grapes, Early Peaches, and Apples, &c., and were discoursed in a most cordial and friendly spirit, for our mutual benefit and improvement. There were many beautiful fruits on the table from different parts of the country for inspection. The Niagara Grape was there from Virginia also fine samples of Plums, Peaches, Apples and Pears; also many flowers and beautiful flowering plants. The committee whose work it was to examine these beautiful and tasty things, has done so, and their notices will be had in the next Annual Report of the Association.

After the hard work of the sessions had been fairly got over, the members from abroad were very generously invited to partake of a spread in the dining halls of the Welland House, where many of the citizens sat down with us to a sumptuous repast of ripe fruits. After justice had been fairly done to the good things before us, some cheering and edifying speech-making was had for our mutual improvement and benefit. It was a grand acquaintance meeting, and scenes like this are very pleasant and long to

be remembered. The next day the programme was changed. The excursion for the members to Niagara Falls was under the leadership of Mr. Mordey, of Drummondville, whose services were very kindly rendered for our enjoyment. This was the closing scene in the varied acts, and, if possible, the grandest of the series. What can compare with nature? Who can paint like her? We wonder at the magnitude of the scene. It is past all description, and if any of my readers wish to get a more definite idea of it, they must see it for themselves. Our kind leader took us also among the gardens and orchards of Drummondville, and showed us much of the varied and wonderful scenery of the place and neighborhood. We had a very pleasant time, and one long to be remembered.

Yours,
Arkona Nurseries, Sept. 1883.

GIRDLED TREES.

Some ten years ago, having seven apple trees girdled by mice, as soon as the snow was gone I took fresh lard and coated the part eaten well over. I then heaped as much of the soft wet earth over that as I could get to stick. I then took some old rags and tied all securely to the trees, and in the fall there was hardly a spot but what was covered with a coarse, strong, thick bark. My idea in trying that process was that the sap would rise between the lard and the bare wood and so form new bark. It did so, but whether the idea is correct or not I would not say. For about three months if the weather is very dry it is best to water the rag and earth well to keep all moist. I have also saved all my young trees which have had the top all die down with sometimes part of the stem, by cutting off all down to where the bark is green; the stump will then force out

more buds than required; let them grow about four inches long and rub off all but one or two according to the height of the stump from where the new growth commences. As all my cherry trees (the common red) is covered with Black Knot since spring, instead of cutting them all out I intend next spring to use the same method of putting on new heads as with the young trees. With this difference I will leave on all the large limbs, cutting them about two feet long from the trunk of the tree, cutting them all off at one height from the ground to form an even tree head.

E. DAY.

Elora, Aug. 14th, 1883.

IN MEMORIAM.

DR. JOHN A. WARDER, of North Bend, Ohio, passed away on the 15th of July last, in his seventy-second year. He was one of the most successful physicians of Cincinnati, but in 1855 he relinquished the practice of medicine, purchased a farm of some three hundred acres at North Bend, where he devoted much of his time to the testing of fruits. He was an enthusiastic student of nature, and gave much attention to the study of American trees. His writings on Forestry in some of its departments have adorned the reports of our own association, and he was everywhere an acknowledged authority upon matters relating to trees. We had hoped he might have been spared for years to come, to give us the fruits of his careful observation and ripe experience which his facile pen recorded in such attractive style.

HENRY B. ELLWANGER, of Rochester, New York, died at his residence on the 7th of August last, at the early age of thirty-three. His work on the Rose, published last year, has shewn him to be not only an enthusiastic cultivator, but a graceful writer, and systematic student, qualities which caused us to

expect much from him in coming years. He is taken away at the threshold of his experiments in cross fertilization of the rose, which were already giving promise of very interesting results. We know not how we can spare such an one from our midst, and mourn the loss of a worker in the field of horticulture whose continuance seems to us to be greatly needed.

THE VICTORIA REGIA.

HISTORICAL REMINISCENCES BY PROFESSOR
SAMUEL LOCKWOOD, PH. D.

It was our privilege to see this queen of the Water Lilies in bloom at Kew Gardens, England, October, 1878. There was a display of Water Lilies from all parts of the world, in every witchery of form, color, and odor—pure white, soft rose-tinted, and deep pink, and the loveliest blue. But the most entrancing for form, color, size, and fragrance was the *Victoria*. She shone, indeed, as the empress of the entire floral dominion.

The present generation cannot realize the interest taken in this superb plant nearly forty years ago—the intense desire to get specimens to Europe, the great efforts, and the provoking failures. Even the seed would refuse to germinate. At last, it was taken over the sea in its native water, and painful care was had as to temperature—even periodical agitations of the fluid, as if to deceive the coy embryo into the idea of the flowing of its natal stream. When success was attained, it was accounted among the florists of the world as “the big thing of the age.” But the conditions of success were so costly: a glass house, a tank of thirty feet diameter, and the water steadily kept up to eighty degrees temperature; private means, unless munificent, could not suffice.

The leaves of the plant are six feet

in diameter; they are green above and red underneath, suggestive of the color habit of the foliage of the Begonias, especially *B. sanguinea*, though it should be said that, as a rule, the Water Lilies have the underside of their leaves of a liver-red, or purplish. These gigantic Lily-leaves, speaking popularly, are, when full grown, round, and with the edge turned up two inches or more, look like immense floating tea-trays. Large aquatic birds stand on them by the hour, watching for fish to pass by. But those great leaves are ribbed in a most ingenious way, imparting immense strength; so that with a board properly arranged to distribute the pressure, a prodigious weight can be borne. I have some notes which I think were made some thirty years ago, from which we will extract, though the figures seem incredible. It was stated in *Science pour Tous*, that in the aquarium of the Botanical Garden at Ghent, the head gardener, M. van Houtte, was interested to learn the force required to immerse one of the floating leaves in the water. One leaf supported a child; another was not submerged by the weight of one of the gardeners. He was led to experiment as to the limit of this resistance—loading the surface of one of the largest leaves with bricks. It was found to bear a weight of 760 pounds avoirdupois—that is to say, nearly equal to five men of average weight.

The first successful effort to bring the *Victoria regia* into bloom in England was in the world-famous botanical gardens of the Duke of Devonshire, at Chatsworth House. Joseph Paxton, the Duke's head gardener, constructed the great glass house for its accommodation, which took the name of its gorgeous occupant. The hint for the construction of this fairy-like building was derived from a study of the structure of the *Victoria's* leaf.

We may, in passing, say that Mr. Paxton designed the Crystal Palace for the World's Fair in England, 1851, built chiefly of glass and iron, all being primarily due to his study of the leaf mentioned. For this achievement he was knighted, and thus became Sir Joseph Paxton.

The first flower of *Victoria regia* in England, was in November, 1849. The event brought together a distinguished concourse of visitors of the nobility and *literati*. A novel event was the appearance, on the occasion, of little Miss Annie Paxton, who, dressed in costume of a fairy, took her place in one of the tray-like leaves, and, like a Naiad of the waters, presided as the fairy guardian of this beautiful floral queen. Such an event could not be less than inspiring; accordingly, the muse of the famous Douglas W. Jerrold produced the following:

On unbent leaf, in fairy guise
Reflected in the water,
Beloved, admired by heart and eyes,
Stands Annie, Paxton's daughter.

Accept a wish, my little maid,
Begotten at the minute,
That scenes so bright may never fade,
You still the fairy in it.

That all your life, nor care, nor grief,
May load the winged hours
With weight to bend a lily's leaf,
But all around be flowers.

It will astonish some to be told that the *Victoria regia* was made to flower in a tank in the open air by Mr. E. D. Sturtevant, at Bordentown, N. J., last August, the water being kept at its right temperature by pipes. I was one of a small party invited to witness the event, but was far away at the time. An enthusiastic friend wrote me about it, and what follows is mainly from his letter: At the first visit, the leaves were six feet across, with a rim about two inches high, and a bud just visible in the depths. It was expected to

bloom in two weeks, and we intended to go again with yourself, Mrs. Treat, and others. Alas! the bud shot up with almost visible rapidity, and bloomed on Sunday evening. I saw it at its second opening, when it was somewhat the worse. At its first opening, the flower rested on the water, a pure white blossom a foot in diameter, and filled the air with a delicious pine-apple perfume; at its second, it was raised above the surface, the petals had become a pale rose, and were strongly reflexed, while the perfume was entirely gone. The stamens were a deep rose color, and folded down, so as to completely cover the stigma, etc. On this second evening, a strange event took place, which we unfortunately did not see, as we had to go to the train, but which was communicated by those who did see it. About half-past seven P. M. the stamens suddenly lifted themselves, and with quite a perceptible jerk shook a mass of pollen down on the stigma. It seems hardly credible, but it is true; this *Victoria* had produced four great leaves, with another partly unrolled, and had bloomed, all from a plant six inches high, with one small leaf, in just four months. One would think that the forming of its cells ought to be visible with a hand lens.

To give completeness to this little sketch, let me quote from the *American Cyclopaedia*: "The flower is of two days' duration. The first day it opens about 6 P. M., and remains open until about the same hour next morning; in this stage it is cup-shaped, twelve to sixteen inches across, with numerous pure white petals, and emits a delightful fragrance. The second evening, the flower opens again, but it presents an entirely different appearance; the petals are now of a rosy-pink color, and reflexed, or bent downward from the center, to form a handsome coronet, but now without odor; the flower closes

toward morning, and during the day it sinks beneath the surface to ripen the seed."

BAGGING GRAPES.

Within a few years, the bagging of Grapes has occupied the attention of many horticulturists. One who has given much attention to this subject, says: "If the application be made in time, the paper bag will preserve the cluster in more exquisite perfection than can be secured in any other way. The Grapes come forth luscious and beautiful enough to amaze Nature herself."

When to bag.—The only safe rule is to apply the bag as soon as the cluster is formed. If delayed too long, the spore of disease may have attached itself to the berry and result in rot. Some have applied the bag before blossoming has taken place. As the new shoot is very tender and brittle, great care must be exercised not to break it.

How to bag.—Take manilla or any other paper bags; cut off the upper corners, in order to wrap the upper portion around the cane; place the cluster inside the bag, wrap the bag around the cane, and then pin it.

Size of bag.—This depends upon the usual length of the cluster, and whether more than one cluster is placed in a bag, a two or three pound bag is sufficient for most single clusters.

Results of bagging.—The cluster will average larger, ripen later, color in general better, produce larger berries, and the bloom will be preserved more perfect than in those not bagged. As to flavor, opinions vary, some think it is better, others that it is not improved.

Bagging as a prevention of rot.—If applied early enough, it is a prevention. Rot is found in some cases in the bags, but mostly takes place after the Grapes are ripe.

Bagging as to the splitting of the Grapes.—Many of the thin-skin varieties split badly in the bags. The Elvira, which, out of bags, splits so badly as to be comparatively worthless, owing to the crowding of the berry in the cluster, also does the same in bags.

The Duchess keeps its color when bagged; Delaware, as a general rule, becomes deeper, Brighton lighter in color; Niagara improves in color and flavor.

The present summer many will bag Grapes by way of experiment. It is doubtful if bagging will become general in vineyard culture, as the extra expense incurred thereby is not made up in the sale of the fruit. To the ordinary purchaser of Grapes in the market, fine clusters, large berries, pure color, and bloom, and exquisite flavor are secondary considerations. To the amateur, or those who enjoy to sit under the shade of their own vines, however, these qualities are precious; and, as the experiment of a few bunches requires but little time and expense, it is well worth a trial of those who grow Grapes for their own use.—J. B. ROGERS, in *American Garden*.

THE NEWER STRAWBERRIES.

On our grounds in the vicinity of New York, on rather heavy clay soil, the Strawberry crop was very good, and most of the new varieties proved satisfactory.

Manchester improves by longer acquaintance. With us the plant is very vigorous, foliage healthy; the berries are larger, lighter colored, and of better quality than those grown in the Jersey sands.

James Vick has been grown in a trial bed together with Captain Jack. The two kinds are not identical. Although they resemble each other in general appearance, the *James Vick* is decidedly

the better of the two; its foliage is larger and more vigorous; its berries are larger, very firm, of more sprightly flavor and generally better quality, and are borne on longer, stiffer, upright fruit-stalks, not hugging the ground like Captain Jack. How a Strawberry plant can be more productive than the *James Vick* is not easily imaginable.

Jersey Queen made but a poor growth.

Sharpless, although of indifferent quality and not ripening well at the tips, has in its favor largest berries, very large, healthy foliage, and under favorable conditions, great productivity.

Bidwell has been very satisfactory for home use, producing a large crop of good-sized, well-shaped and good-flavored berries. Both in hills and matted beds, the plants wintered remarkably well during the last two winters, without protection.—*American Garden*.

FREESIAS.

Freesias are little bulbous plants from the Cape of Good Hope, long known to botanists, but only recently introduced as popular garden flowers. They grow twelve to fifteen inches high, have foliage not unlike small narrow-leaved Irises, and a little bunch of white or yellow, spotted with orange, colored flowers at the end of a ten to sixteen-inch long, slender scape. These flowers are moderately large, very pretty, deliciously fragrant, abundantly produced, and great favorites, with florists for their finer bouquet work. Potted in September or October, say six to nine bulbs in a six-inch pot, and grown along as you would a potted Hyacinth, slowly at first, then in light-er and warmer quarters, they will blossom between January and the first of April. During the summer months let them "dry off and rest," as you would

an Oxalis, and start them again, by giving a little water in September. Unless you think there would be too many roots in the pot you may grow them in the same soil, and without repotting them for two years, providing you give them a top dressing of fresh rich earth. They are easily raised from seed, and seedlings one year old will blossom. Their nomenclature is somewhat muddled, but the two kinds known as *Fressia refracta alba*, and *F. Leichtliniana* are, I think, as good as any.—WM. FALCONER, in *Am. Garden*.

EUCHARISES AND THEIR CULTURE.

Of all plants requiring stove treatment that have been introduced into Europe during the present century, there are few, if any, that have become more general favourites than *Eucharis amazonica*, or that better deserve to be grown by all who have the convenience of a house wherein can be maintained an amount of temperature sufficient to grow it. When this plant first made its appearance in this country the extreme purity of its lovely white flowers, combined with their exquisite fragrance at once produced an impression in its favor, even though imperfectly grown—imperfectly so far, that the small-pot culture, to which it was then thought best to confine the plant, was not such as to admit of that full development which it has since exemplified under more liberal treatment. The restriction of its roots to promote flowering has been found to be altogether unnecessary and to seriously prevent the bulbs from increasing as they would have done if accommodated with plenty of space. In this it differs from most bulbous plants, the generality of which do not succeed well under pot culture unless their roots are somewhat confined. It has no particular season of flowering; with suitable treatment the same plants will

bloom two or three times in the course of the year by subjecting them to an alternate short season of growth and rest. To do it full justice it should not be moved when in bloom to a conservatory or other house cooler than that in which it has been brought into flower. Growth should immediately follow the production of bloom, and it naturally receives a check if taken from a warm to a cold temperature. It is a remarkably effective plant in the stove, its ample green leaves setting off to the best advantage the numerous umbels of wax-like flowers that rise well above them. It is, however, especially for the production of cut flowers for filling vases and for bouquets that it is most valuable, almost rivalling in these respects the *Camellia* itself. In addition to the individual flowers standing well when cut (which their peculiar texture and substance insure) each umbel opens its blooms consecutively, so that when desired almost every flower can be used as required, a circumstance that has made the plant a general favourite with those who grow flowers for market, or who have to provide for private establishments where a continuous supply is needed.

PROPAGATION is effected by separating the bulbs, which increase moderately fast when well grown, but, like most other evergreen bulbous plants, it does not like to have its roots much disturbed. Interfering with them, to the extent necessary when separating them, has the effect of retarding growth for a time; therefore plants of this *Eucharis* should only be broken up when they have either got larger than is requisite, or when it is desirable to increase their number. The time for carrying out the operation should also be chosen when growth is complete; it should not be attempted when the leaves are in course of formation, or when they are not fully matured. Let us suppose

that early in the spring a large plant exists which it is deemed advisable to break up, turn it out of the pot, and if the roots are very much matted and the soil of an adhesive character, it will be difficult to separate them without breaking; to avoid this place the plant in a tub large enough to admit the ball, half fill it with tepid water, and work out all the soil with the fingers, which will leave the roots so that they can be separated with little breakage. The bulbs may be divided with a knife at the point where they adhere to each other, or they may be parted by hand, putting them singly, or two or three together, in pots from 5 inches to 7 inches in diameter. When growing, a copious supply of water is required; consequently the pots must be well drained. This *Eucharis* will thrive in good turfy loam, to which add as much sand as will keep it porous. Pot firmly without injuring the roots, and cover the bulbs to about half their depth. Do not give much water until growth has commenced. Place them at once in a temperature of 70°; if they can be plunged in a bottom heat 10° higher, they will progress all the quicker. In this temperature they will grow fast. Shade slightly during the hottest part of the day in very bright weather, but in doing so do not darken the plants too much, or they will grow up weakly. Let them have a moderate amount of air early in the day, shutting it off in good time in the afternoon, and syringing overhead at the same time. They will bear during summer as much heat as the generality of stove plants. It will not be advisable the first summer to rest the smaller bulbs for flowering, as it will be better to get as much growth as possible. Early in August shift them into pots two inches larger than those they are in; continue to give them a liberal amount of heat and moisture, both at the roots and in the

atmosphere, until autumn, by which time they will have made considerable progress.

DRYING THEM OFF.—At this time, when the leaves are fully matured, cease shading, and gradually withhold water till the soil gets so dry as to cause the leaves to flag slightly, but so as not to injure them, giving a little before this occurs, just to freshen them up, and again alternating the treatment by drying and then slightly watering them. Continue this treatment for a month, during which time they can be kept in a night temperature of 55° with a few degrees more warmth during the day, when they may be well watered and placed in 10° more heat; if they can be plunged in 10° higher than this it will be still better. So managed they will quickly push up their flower stems, and they should be encouraged by supplying them with plenty of water at the roots, and as much heat as is consistent with the diminished light of the season. Thus treated, when their blooming is over they will grow on slowly through the winter, and after their full development they may again be submitted to the drying and resting process, after which increase the temperature, give water, and treat them in every way as before. This alternate growing, resting and flowering can be practised two or three times in the year with the best results without injuring the plants in the least. Do not at any time pinch them as regards pot room. When the soil is well filled with roots they will be much benefited by a good soaking with manure water once or twice a week. For general purposes moderate-sized plants in 12-inch or 13-inch pots will be found the most convenient, but where it is desired they may be grown on into specimens 6 feet across by simply using pots or tubs proportionate in size. When large they make fine exhibition plants, their general appear-

ance being such as to contrast well with their associates.

E. candida differs little from *E. amazonica*, except that the flowers are much smaller and more elegant; the foliage is also distinct. It is a native of the United States of Colombia, and a most desirable kind.

E. Sanderi has pure white flowers in the way of those of *E. amazonica*, $2\frac{1}{2}$ inches to $3\frac{1}{2}$ inches in diameter; it will be an acceptable addition to stove bulbous plants. It comes from New Grenada.

INSECTS.—Most of the pests that infest stove plants will live upon *Eucharis*, but from the nature of the leaves, they are much easier to destroy than on many plants. If thrips or green fly make their appearance, fumigation will generally be found to be the best remedy, but from the regular use of the syringe these and red spider are not often troublesome. Should scale or mealy bug gain a footing they must be diligently sought for and removed by means of sponging, using a soft brush for the bases of the leaf stalks where the bugs will be found to lodge, for, if not destroyed, they will increase to an extent that will both disfigure the plants and do them serious injury by the constant cleaning process which their presence makes necessary.

T. BAINES.

CANNED GOODS.

To say that the canned goods trade of the United States is already an enormous industry, does not half express the truth. Nevertheless, as great as it is, it is only in its infancy. There is scarcely any part of the civilized world which does not receive more or less of the stock of American packers. Even the naked warriors of the Zululand and the explorers of the Congo, the islanders of the South Pacific and the inhabitants

of the Arctic regions, are more or less familiar with the picturesque and highly colored labels of American canned goods. The half tamed and half frozen natives of Nova Zembla and Labrador, in opening our "canned salmon" and "shadines," have discovered delicacies equal even to their whale blubber and porpoise fat; and the man-eating New Zealander has forgotten his cannibalism in his enthusiasm over "Boston Baked Beans," while pyramidal mountains adorn the windows and shelves of every grocery store in our own land. A thousand ships and steamers carry these goods over every sea, lake and river of the globe, and they are included in the "ship's stores" of the war vessels of every navy and steamship line in the world.—*The Wine and Fruit Grower.*

WHAT ROSES TO PLANT.

A common error committed by beginners in Rose culture is attempting to grow varieties that are of delicate habit; attracted by great beauty of flower, or fragrance, they do not consider, or do not understand, that vigor of growth, perpetuity of bloom, and perfect hardiness are very seldom combined with the qualities which have allured them.

The most popular Roses are the Hybrid Remontants; these are moderately hardy, and produce flowers of the highest finish. Among them none are more desirable for tyros than *Alfred Colomb*, *John Hopper*, and *General Jacqueminot*. These three varieties probably absorb more of the desirable features that go toward making the perfect Rose than do any others which could be named; they blend well, and are very effective planted in a bed together or separately.

A pleasing departure from the usual method of growing Roses is found in the pegging-down system. In this way the long shoots are carefully bent down,

and fastened to the ground by means of hooked sticks or pegs. As a result of this system, an immense quantity of bloom is produced. True the individual flowers are not of equal finish to those grown in the ordinary way, but we get a mass of color, a striking effect, that is not otherwise to be had. I do not advocate this method to the exclusion of the other, but its occasional use will certainly be satisfactory.

Besides planting Roses in beds, we should scatter them through the borders of our gardens, giving the more favored positions to the delicate kinds. Among these we find *Eugenie Verdier*, the most beautiful of the Victor Verdier type, a Rose of very delicate tint,—deep silvery,—pink tinged with salmon; lovely in the bud and in the open flower; attractive as maid or matron. Not only the flowers, but the foliage of this variety is most pleasing. Another variety which is beautiful in both flower and leaf is *Charles Lefebvre*. This has the thick texture of petal, and something of the same form as *Eugenie Verdier*, but the color is that of *General Jacqueminot*, deepened by a shade of satiny-purple.

Among the somewhat neglected Roses are *Marguerite de St. Amande*, a deep pink, beautiful in the bud state, and flowering through the summer and autumn months. *Baroness Rothschild*, a blush-pink, with exquisite cup-shaped flowers; single blooms of this kind, during December and January, sell in New York for one dollar, and even two dollars each. It has always been a great favorite with exhibitors. *François Michelon* is a striking variety, intermediate in character between its parent *La Reine* and *General Jacqueminot*; it has large, deep rose-colored flowers varied with lilac, of splendid globular form. A valuable feature is its late blooming, the flowers not developing until most others of the same

class are past their prime. *Elise Boelle* is perhaps the finest white Rose that we have; it blooms profusely all through the summer; has full globular flowers, of the most perfect form; the center is generally tinged with blush. It is not possible to imagine a flower of greater beauty.

Moss Roses have been favorites in our gardens, but it is wonderful how many inferior varieties are grown; sorts are disseminated that are not mossy, are not beautiful. None of the Moss Roses will compare with those of other classes as regards the open flowers. It is the fine buds that make them so attractive, and if a Moss Rose has not a well-formed bud it is worthless. The best of the Mosses are *Gracilis*, *Crested*, and *Common*, a triad whose crested loveliness has a common grace.

Not one of the least of the qualities we desire in a Rose is fragrance. In this regard all classes must do homage to *La France*, the sweetest of all Roses. Compelled to choose one variety, this should be ours. To be sure it is rather tender, but it can easily be protected, and so winter safely. It does not always open well, but it is a simple matter to assist,—an operation not practicable with most varieties that do not open perfectly. If *La France* does not develop well, by pressing gently with the fingers the point of bloom, and then blowing into the center, the flower will almost invariably expand, the pent-up fragrance escape, and almost intoxicate with delight our sense of smell.

Not enough attention is given to the Tea Roses and Bourbons. The Hybrid Remontants justly claim our first attention when they are in their perfection; but after their first blooming is over, throughout July, August, and September, they are much less attractive than many monthly Roses. Varieties like *Bougère*, *Gerard Desbois*, *Homer*, *Sombreuil*, *Madame de Vatry*, *Marie Van*

Houtte, Madame Caroline Kuster, will give a continuous supply of flowers throughout the summer and autumn.

The fact of Tea Roses being tender should not debar us from their culture; the truth is, they have in this matter been abused. The sorts I have named are in reality a little more tender than *La France*, the Hybrid Noisettes, and all the *Victor Verdier* race of Hybrid Remontants. If earth be hilled up about the plants, and then a slight covering of some loose material, like branches of evergreens, be given, the hardier sorts of monthly Roses will winter in safety. There is sometimes a loss of plants, but the percentage is light, very little more than happens to the so called Hardy Roses.

In giving this protection, care must be observed not to smother the plants by entirely excluding the air; this never occurs from the use of evergreen branches, but when straw or litter is taken, sticks or boards should be used to prevent the material from matting together. This is one of the cases where it is possible to kill by mistaken kindness. If it be objected that this covering of the Roses is troublesome, then we must reply to the objector,—you are no true lover, you are but a false knight; you cannot have beautiful Roses in your garden, because you have them not in your heart.—*H. B. Ellwanger, before the Western N. Y. Horticultural Society.*

ALLIGATOR PEAR.

The Alligator Pear, *Persea gratissima*, is sometimes an immense tree. The fruit, which is occasionally seen in New York markets, is pear-shaped, with deep green or dark purple skin, according to the variety. The pulp is firm, buttery yellow, surrounding a large, hard stone.

In Brazil they fill the same place as melons in the United States, being

eaten at breakfast with sugar or pepper and salt, according to taste. A liking for Abacaxe, as this fruit is called in Brazil, is an acquired taste, but one soon becomes very fond of them. They cost only from one to three cents each, and with oranges and bananas are the most common fruit hawked round the streets by the fruit-sellers, who carry them upon their heads in large flat wooden trays.—*American Garden.*

CELERY.

Celery requires a cool climate. South of the fortieth parallel, the climate is too warm for the best production of this toothsome vegetable. As we approach the great lakes, we find the temperature becoming more suitable for Celery, and by the time we reach them we find it all the gardener could desire.

Celery needs a cold, heavy, deep, very rich soil. The soil must be made of this character artificially, if it is not so naturally, to raise Celery profitably. The ground must be well manured; that is, a great plenty of fertilizers must be used, as the plant is a greedy feeder, and there is very little danger of getting the land too rich. Any good manure is suitable for it; but nothing equals barn-yard manure well worked over.

The old system of cultivation in trenches has been abandoned by the most progressive gardeners. It was troublesome and expensive, and it has been found that fully as good results could be attained by surface cultivation. But along the fortieth parallel, and south of it, Celery cannot be bleached in the open ground, as is done in colder countries. The climate is too warm for this, and when attempted, the stalks scald and rot.

Celery should be sown in the seed-bed in the spring, as early as the ground can be brought into condition for seed-

ing. The ground should be thoroughly pulverized, and the seed sown in rows twelve inches apart, either by hand or with a seed drill. Most gardeners prefer to use a drill, and undoubtedly the best results are attained by its use. Great care should be taken to use only first-class seed. Celery is a delicate plant, slow and weakly to start, puny and slow-growing. From the seed-bed it must be transplanted to the growing-bed. This last bed should be prepared the same as for late cabbage. Manure heavily and pulverize thoroughly.

A common mistake is made in transplanting too early, often June first. Except in the northern part of our country, the weather will be too hot to bleach Celery grown so early, at the proper time. It is the better plan to transplant late, say about the middle of July.

In setting out, be careful to press the dirt firmly around the plants. The benefit of this is greatest in a dry season, but important at all times. Do not plant too deep. This is a common error. The soil should not cover the crown of the plant. Plant in rows three feet apart, putting the plants six inches apart in the row. After planting, keep clean with plow or hoe till the first or middle of September. Then it must be "handled."

The handling process is simple. Hold the Celery compactly in one hand, and bring the soil up around it with the other to hold it upright and close together.

The next operation is bleaching. It can be bleached in the open ground by banking the earth up around it with a spade till it reaches the tops of the leaves. This should be done about the first of October. (September in Ontario.)

After handling late Celery, the earth can be drawn up around it with a hoe to prevent its freezing. It will stand

considerable frost if the soil is around it. The later it is left in the ground the longer it will keep; therefore, Celery for spring use should be left in the ground till in danger of freezing.

This brings us to the process of storing for winter use. Dig a trench as deep as the Celery is high, and the narrower the better, say eight inches in width. Dig up the Celery, keeping a little dirt fast to its roots, and pack it in the trench in an upright position, just as it grows. Leave it in this shape till the latter part of December (November in Ontario, the time depending somewhat upon the severity of the weather), when a light covering of straw should be put upon it, and more covering added later, as is required to keep it from freezing.—*Am. Garden.*

THE YELLOW WOOD.

This handsome little tree, perfectly hardy in this country, is not so frequently grown as its merits certainly deserve. It has smooth bark, smooth pinnate leaves, in young vigorous specimens measuring from 1 foot to 1½ feet in length, but in old ones about half that size, with from five to eleven roundish or oval shortly stalked leaflets of a bright green colour. The leaf-stalks are hollow at the base, and enclose the leaf-buds of the succeeding year, just as is the case in the Plane (*Platanus*) and some other trees. The large pendulous paniced racemes of showy white fragrant flowers, somewhat larger than those of the Locust Tree (*Robinia Pseudacacia*), droop from the ends of the branches. Old trees at Kew flower frequently, and pods which London states in "Encyclopædia of Trees and Shrubs" are never produced in England, are now and then ripened. Two of the largest specimens in the Kew arboretum measure respectively as follows: Circumference of trunks near the ground, 3 feet 10 inches

and 4 feet; diameter of heads, 27 feet and 29 feet; height of each, 28 feet.

On account of its graceful habit, the beauty of its bright green foliage in spring and summer, the showy flowers and the brightness of the rich yellow autumnal tint assumed by the decaying leaves, the Yellow Wood is eminently a fit subject to be generally planted for effect in parks and pleasure grounds. In its native country it flowers in May and June, but in Britain a month or so later.

The name *Cladrastis*, according to its author, Rafinesque, means "brittle branches." For a long time after its separation from the genus to which it was first referred (*Virgilia*), *C. tinctoria* was the only known species; but some years ago, long after the publication of Loudon's "*Arboretum*," the Russian botanists discovered a second, *C. amurensis*, in Amurland.

C. TINCTORIA seems but little subject to variation; no varieties are mentioned in any of the numerous tree catalogues and books I have looked through, with the single exception of M. Laval-lée's "*Arboretum Segrezianum*," where the name "*gracilis*" is given to a form I have not seen.

In his "*Catalogue of the Forest Trees of North America*," Professor C. S. Sargent gives the following information respecting the Yellow Wood: It is found from Central Kentucky, on the banks of the Kentucky River south, to Middle and eastern Tennessee. The wood is of a clear yellow colour, is said to split with difficulty, and to make valuable fuel. It is a small or medium-sized tree; found principally along streams or on rich hillsides; rare, and in danger of extermination for fuel.

C. AMURENSIS differs from the above in its larger buds, olive-green bark—in old trees peeling off in flakes like that of our common Birch—duller green,

more leathery leaves, and in its erect paniced racemes of more densely packed, much smaller, more shortly-stalked flowers. Although not so handsome or graceful a tree as the Yellow Wood, it is well worth a place in any garden; it is perfectly hardy, and flowers freely in a younger state than *C. tinctoria*. In spring the peculiar grey-green of the silky pubescence which clothes the young leaves gives this an appearance totally unlike that of most other hardy trees. When seeds are not procurable, perhaps the most ready means of propagation is by grafting, using *Sophora japonica* as a stock.

In its native countries—Manchuria, where it ranges in the basin of the Amur River from lat. 50° 15' to 52° 20' north, and the Japanese island of Jesso—it makes a small tree of 40 feet in height, with a trunk 6 inches in diameter, and drooping, densely leafy branches.

Sir Joseph Hooker, in the *Botanical Magazine*, thus speaks of this tree: "It is not to be wondered at that, when the subject of the present plate was described, it was supposed to be a new genus, for at that time the close affinity of the floras of North-eastern Asia and the Eastern United States was not generally recognised, and the affinity of *Maackia* with the hitherto monotypic genus *Cladrastis* could not have been anticipated. Nevertheless, these two geographically widely severed plants are unquestionably congeneric, and not to be separated by even a sectional character. It thus adds another to the remarkable assemblage of genera found in the two countries indicated, but not in the intervening territories of Western America and of which Professor Asa Gray has made such good use in tracing the origin and migrations of the North America flora.—*The Garden*.

PLUM AND CHERRY TREE BLACK KNOT.

This season has been favorable for the development of the disease of the plum and cherry trees known as black knot. This is an old, long-standing trouble of the orchards, and has been the subject of much discussion in the agricultural and horticultural papers for many years. The "diseases," so-called, of plants are now divided under three heads: First, those caused by insects, as the various galls, &c.; second, those of fungous origin, like the rusts, smuts, mildews, &c.; and third, those troubles that are organic, as far as they are understood. It is safe to define the third class as including those diseases that do not belong to the first and second classes—the plants are "out of sorts."

The black knot was long believed by entomologists to be of insect origin, and they seemed to have a very strong argument. The eggs and young of insects were usually found within the substance of the knot, and their presence was strong evidence of the cause being insects. All sorts of distortions, like galls on willows, oaks, &c., were known to be the work of insects—gall-flies, &c. Within the past ten years, the black knot has been carefully studied by several experts in fungi, and under the higher powers of the microscope the cause of the peculiar distortions became evident. The black knot is now well demonstrated as belonging to the second class of diseases or disorders, and is therefore of fungous origin. Among other things, it was shown that the same kind of insect was not always present; in fact, no insects or eggs were found in the early stages of the knot. But instead, the substance of the infested part is found to contain a multitude of small threads or filaments of a fungus.

It may be well to state that a fungus is a plant of a very low order, and with a very simple structure. Among the most familiar members of this group of flowerless plants are the various moulds that grow on bread, cake, cheese, &c., and make sad havoc in the housekeeper's pantry in midsummer. The toad-stools and the mushroom are larger examples of the class in question. The black knot fungus is known to botanists as *Sphaeria morbosa*, and attacks the young branches of the plum and cherry trees in the spring. By the first of June the infested parts have swollen considerably, and soon after these portions have cracked longitudinally in one or more places. The surface thus exposed is soft or spongy, and quickly turns to an olive-green colour. This colour is due to the formation of a multitude of minute spores that form on the tips of plants, extending from the surface. The knot continues to increase in size until past midsummer, and frequently the branch becomes bent to one side, or otherwise distorted, owing to the irregular growth of the fungus. It is seldom that the knot extends equally on all sides of the branch.

As the season advances, a second form of spore is formed, and it is within the substance of the knot. The surface spores above mentioned are quickly grown and serve to spread the disease from branch to branch. A spore has the same office to fill as a seed, but differs in structure. Spores are, in short, the seeds of flowerless plants. The internal spores of the black knot are formed slowly, and designed to carry the life of the plant through the winter. They germinate in the spring. Very many fungi have two or more kinds of spores, some for quick propagation and others for the preservation of the species.

The fact that insect eggs and "worms" are usually found in the substance is

easily reconciled with the present known cause of the knot. The soft substance developed by the fungus furnishes a fine home for voracious larvæ, and the mother insects make the most of the feeding ground thus provided. The remedy consists in the removal and burning of all affected parts. The branch should be cut several inches below the swelling, to insure the removal of all the "disease." If the parts removed are not burned, the spores will continue to form for some time. The knots are most easily seen when the trees are free from leaves in the winter season, but they should be removed whenever found. The choke cherry is a favourite host of the knot, and all the hedge-rows should be cleared of this kind of tree. Look for the black knot, and whenever found, cut and burn it.—B. D. H., in *Country Gentleman*.

FRUIT INSECTS.

A young cultivator, who is about to set out a fruit garden with a general supply of fruits, wishes to know what are the most formidable insects to be generally feared, and how to meet them to best advantage; and also if there are any other troubles to guard against. In answer, a book might very properly be written on the subject, and we can therefore on the present occasion give only a few condensed and leading statements.

THE APPLE.—The most formidable enemy is the codlin moth, and the remedy is spraying with Paris green in 700 times as much water, two or three times when the apples are as large as cherries. The canker worm is killed by the same treatment earlier in the season. The orchard caterpillar is easily destroyed by well-known means. The borer is killed by punching in its hole with a flexible wire. With these re-

medies promptly applied, it is not difficult to have good crops of fine apples, but good culture and manure are also indispensable.

THE PEAR.—The great drawback is the blight. A remedy, pretty efficacious, is cutting off promptly all the affected limbs and burning them; and the best preventive is planting those sorts least liable to the disease, as the Seckel, Winter Nelis, Duchesse, Clairgeau, Anjou, &c. In some places the curculio disfigures the crop, and the young fruit is to be treated the same as for the plum and the codlin worm the same as for the apple.

THE PLUM has its great enemy the curculio, usually regarded as too formidable to be conquered. We have for many years found the insects easily destroyed by jarring down on a stiffened sheet carried on the operator's left arm, while striking with a heavy hammer in his right hand on an iron plug, when they are quickly killed by a pinch of thumb and finger. The whole expense for a season is about six cents a tree, but there must be no intermission. Failure results from the use of padded mallets and other feeble appliances. The black knot sometimes destroys plum trees, but it is easily kept off by prompt excision.

The drawback of *peach culture* is the yellows. When first seen in an orchard, the diseased trees must be grubbed up and burned. The grub in the bark at the root is easily cut out and destroyed. To keep a peach orchard in good bearing condition, the ground must be kept mellow by cultivation, and the limbs must be kept short by cutting back in spring.

THE CHERRY is troubled with the curculio and with birds. The former is prevented by the same method as described for the plum; it is hard to say what is the best treatment for the birds. Some cultivators assert that

they are more formidable than all insects taken together, in their attacks on cherries, strawberries, blackberries, and often on early pears and peaches.

CURRENTS are easily protected from the currant worms by dusting or spraying with white hellebore, but the operation must never be deferred till next day after they are first seen; the same remedy protects gooseberries.

Nearly all these remedies, if promptly, intelligently and unremittingly applied, answer their intended purposes well, and do not require so much labor as the proper cultivation of the soil. The preceding are the principal enemies of the fruit crop, although a number of others of less importance might be named.—*Country Gentleman*.

SUMMER AND AUTUMN BLOOMING SHRUBS.

The great majority of ornamental shrubs produce their flowers in spring, and we often see collections all aglow in the early months, that show nothing but foliage for the rest of the year. With proper care in selection, the shrubbery may be made attractive at all seasons. In choosing shrubs for planting, regard should be had not only to flowers, but to fruit, as some are more ornamental in fruit than in flower. Of the late blooming shrubs, none are more desirable than the Japanese *Hydrangea paniculata grandiflora*. This produces at the end of each stem a large pyramidal cluster of flowers; these are at first, pure white, gradually becoming pinkish, the color deepening, until frost comes. By pruning this shrub severely the panicles may be produced of enormous size, so large as to require a stake for support. It is perfectly hardy, and one of the most valuable introductions of late years. A capital subject for the lawn is the Small Buckeye, (*Æsculus parviflora*), of the Southern States.

It forms a round headed, dense clump, with many stems, and in July and August is covered with panicles of white flowers, forming a most beautiful object. The old Rose of Sharon, *Hibiscus Syriacus*, (called in the old catalogues *Althæa frutex*), is a most desirable shrub. It has been much improved of late years, and the best nurseries now offer both double and single varieties, in color from white to deep purple. As these bloom in August and September, when few others are in flower, they are most valuable shrubs. They need a close pruning each year, otherwise they will grow very straggling.

Among shrubs valuable for their showy fruit, the different species of *Euonymus*, or Burning-bush, are desirable. The native *E. atropurpureus*, or "Wahoo," is excellent, but our favorite is *E. latifolius*, the "Broad-leaved Burning Bush," from Central Europe. This is as yet rather scarce, but would be propagated more generally, were its merits known. In selecting shrubs for their autumn effect the old "Smoke-tree," often called Purple Fringe (*Rhus Cotinus*), the "Wig-tree" of England, should not be forgotten, as it is perfectly hardy and very showy. Among climbers, the Japanese Halls' Honeysuckle (*Lonicera Halliana*), is a most valuable introduction. It blooms, and keeps blooming, and never tires. Our native Trumpet-Creeper (*Tecoma radicans*), and its oriental brother (*T. grandiflora*), are valuable for their rapid growth, and their abundance of trumpet-shaped, orange-scarlet flowers, produced from July to October. Some of the improved varieties of Clematis are late bloomers, and our native Virgin's Bower (*C. Virginiana*) gives a wealth of white flowers in August, and its clusters of fruit are beautiful later. Among the vines, ornamental for their fruit, the Roxbury Wax Work (*Celastrus scandens*) should not be over-look-

ed. If allowed to run upon a tree, it will soon kill it, but upon a trellis it is valuable for its glossy foliage and scarlet fruit. By proper care in selecting, the shrubbery may be attractive from early spring until frost comes, and even later.—*American Agriculturist*.

PEACH YELLOWS.

A series of experiments have for some time been carried on by Professor D. P. Penhallow, at Houghton Farm, to discover the cause of, and remedy for, peach yellows. The conclusions reached are :

That peach yellows is not caused primarily by fungi or parasitic plants, although they may accompany and aggravate it by their attacks on the plant weakened by disease ; nor is it caused by too much dampness or heat in the atmosphere, nor by unseasonable frosts or excessive winter cold, nor by want of proper drainage in the soil, nor by the use of fermentable stable manure. The primary cause he considers to be a deficiency in the soil of certain food-constituents, especially potash and chlorine, which are supplied in the well-known German potash salt, muriate of potash.

The most striking symptoms of the disease are—unusual features in the cellular structure and contents, which are evident under the microscope only; an excess of lime in wood and fruit, and deficiency in potash and chlorine, which can be detected only by chemical analysis ; premature ripening of the fruit ; smaller leaves, with a red or yellow color in place of the usual green ; a dark and parched appearance of the bark on the main limbs. The disease appears gradually, first on young branches, from which it spreads over the whole tree ; it can be detected by microscopic examination of the cell structure and contents in advance of

the appearance of any outward symptoms ; of these he considers the premature ripening of the fruit and an unnatural color and flavor as the most important.

In way of possible remedies, use stable manure with caution ; trim off diseased branches as far as possible without too seriously mutilating the tree, and cultivate carefully. Apply the following mixture of commercial fertilizers : 25 lbs. kieserite, 100 to 150 lbs. muriate of potash, and 450 lbs. dissolved bone-black, at the rate of 6 to 9 lbs. of the mixture to each tree ; if the trees are badly diseased, add more muriate, about 4 lbs. to each tree, in Spring before growth begins, and in the Fall. Spade the ground as far as the roots extend, mulch with the inverted sods or straw, and apply the fertilizer on this mulch, thus avoiding too near an approach to the roots. The evidence of this theory of the cause is found partly in the cures that have been effected by this treatment with muriate of potash. The remedy is a simple one for so destructive a disease, and is well worthy of careful trial by all whose peach orchards are attacked by it.—*The Wine and Fruit Grower*.

THE ONION MAGGOT.

“Coal ashes at the rate of about 25 bushels per acre are now asserted to be a perfect specific for the onion maggot, and as they are easily procured and applied, a trial at least could be given at a very small expense.”

The above seems to be thrown out without any statement of experiment by any one who vouches for the correctness of the assertion as proved in his own experience. In some places this maggot has been very destructive, and growers of onions would be most thankful to be put in the way of a “perfect specific.”

THE EARLY CLUSTER BLACKBERRY.

This was a chance seedling, discovered about ten years since on the farm of Charles W. Starn, of Camden County, N. J.

It has so far proven very vigorous, healthy, and wonderfully productive. We are told that thirteen quarts of ripe berries were picked from a single hill at one picking. It is of good size and of excellent quality.

A new blackberry is only a blackberry and might at first sight be considered of little account, but when it is known that hundreds of car-loads are grown and marketed yearly from the three States of New Jersey, Delaware, and eastern part of Maryland, and when we take into consideration the thousands of acres of vines that are required to produce such an amount of fruit, we are led to believe that a new blackberry, even if only a blackberry, if an improvement on all the older varieties, might not be such a small affair.—*Farm and Garden*.

GRAPES IN THE LAKE ERIE VINEYARDS AND IN NEW JERSEY.

George W. Campbell, widely known as a skilful grape culturist, in a letter, dated July 24, says: "I am sorry to say that in a recent examination of the vineyards on the islands of Lake Erie I found them generally in a very unpromising condition, the early appearance of rot and mildew having already so much injured the grapes that one-third of a crop would probably be a full average estimate, with favorable weather the remainder of the season. Catawbas seem most injured, Concord next, and Ives and Delawares the least."

A cultivator in the northern portion of New Jersey writes us: "I have had the blues for the last three weeks over my grapes, which are mildewing and

rotting badly. I have been treating it with sulphur, a thing I never did before, and bagging the best clusters, hoping to save some of the unaffected ones. In a recent letter from Mr. Downing, in answer to my inquiry, he says: 'If I begin using sulphur as soon as the leaves are the size of a half dollar, and renew it after each rain, it will generally prevent it, but not always.' The fact is the mildew did not appear till the grapes were set, and I did not apply sulphur till then."—*Country Gentleman*.

SALVIAS.

For the production of a brilliant, massive, floral effect during late summer, and all of autumn until frost, no plant can compare with the Scarlet Sage, *Salvia splendens*. Its large, pendent, plume-like racemes of brightest scarlet form a striking contrast against its glossy green foliage, and in fact against that of any green-leaved plants and shrubs.

The plants may be grown from cuttings or from seed, the latter method being the one generally adopted. The seed is sown very early in spring, in a greenhouse or hot-bed; when of proper size, the seedlings are planted in small pots, and toward the end of May transplanted to the open ground. They are now raised in immense quantities by florists and nurserymen, and the young plants may be purchased cheaply in every flower market. The *Salvia* is naturally a rank grower, forming long-jointed stalks; and in order to produce its best effects, the plants must be pinched back from the start, so as to shape into a compact bush.

They delight in deep, rich soil, and should be watered evenings during very dry weather. Toward the end of September they may be taken up, potted in soil consisting of three parts loam, one

leaf mold, one manure, with a sprinkling of sand, or in any good, rich soil. If lifted carefully, shaded for a few days, and then brought to a sunny window, they will continue to bloom for some time.—*American Gardener.*

RASPBERRIES IN NEW JERSEY.

Among these, Early Prolific is the earliest and most productive of the red varieties, and has always given us better results in every respect than Reliance. Highland Hardy is a little earlier, but too small and light a bearer. Turner is a little better, but too small. Cuthbert is large and productive when well cultivated and thinned. Superb is large, productive and promising, and there is little difference between this and Montclair, the latter being the sweeter. A lady residing about a mile from here, last week requested me to call and see her Montclairs. I did so, and a finer sight in the raspberry line I never beheld. The plants, five feet high, were loaded outside and in with berries. Ripe specimens, three-fourths of an inch in diameter and seven-eighths of an inch long, were abundant. She thinks it "just good enough." [We have fruited this sort several years and find it valuable.—Eds.] Brandywine is of no account save to produce plants. The little fruit which it gives is hard, dry, and destitute of good qualities. Clarke produces fine berries, but they require careful handling even for home use, and the plants are not fully hardy. Shaffer is a very vigorous grower, the fruit resembling red black-caps till fully ripe, when it assumes a darker color. Some of the berries are monsters in size, [averaging with us about seven-eighths of an inch in diameter.—Eds.] It is about the same in quality as the Rochelle, which we have had to discard on account of its liability to disease. The Caroline

gives us great satisfaction, being hardy, healthy and productive, the berries large, very attractive in colour and admirable in quality. It finds its way to our table oftener than any other.—*E WILLIAMS, in Country Gentleman.*

ROSE PAQUERETTE.

This Rose has only been brought into prominence within the past year or two, yet it is rapidly making its way into popular favor. It is a charming little bush, resembling a dwarf miniature form of Aimee Vibert, and, like it, bears comparatively large clusters of small white flowers, but unfortunately almost, if not quite, scentless. A very useful purpose to which this Rose can be put is to grow it in 5-inch or 6-inch pots, and employ it for greenhouse decoration during the spring and early summer months. It is much better fitted for pots than for the open ground, as, being dwarf, the flowers get disfigured by heavy rains. It can be readily struck from cuttings taken off at any time when the young shoots are in a half-ripened condition; insert them in pots of sandy soil, and keep them close till rooted; then pot them off, and when requisite, shift them into 5-inch pots. If cuttings are taken now and placed in a gentle heat, they will root very quickly, and can be potted off and established in small pots before winter, when the protection of a frame must be accorded them. When growth commences in spring the strongest may be potted on, and will form little flowering plants the next summer; but the first season, free growth rather than flowers should be encouraged, so as to obtain good plants for the following year. Some of the most likely may then be introduced into a little heat as early as the end of February, and, by starting them in successive batches, a display of flowers may be kept up for a

long time. Good loamy soil, with, if too heavy, a little leaf-mould and sand added to it, suits this Rose well.—H. P. *The Garden*.

MANGOES.

The Mango, *Mangifera Indica*, is one of the most beautiful of fruit-bearing trees. Originally from India, it has become acclimatized in all tropical countries. In Brazil it grows to a large size, but we have never seen trees which had attained the magnitude to which they grow in their native country.

The foliage is deep, glossy green when old, the young leaves varying from pink to deep brownish-purple. The flowers are small, yellowish-pink, in branching panicles. The fruit is one-sided, dark green, but often with bright, rosy cheek; is frequently, when fully ripe, all bright yellow. The pulp is fleshy but full of fibres which cling to the seed, and as there is a great deal of juice it is more difficult to eat a Mango than a cling-stone peach. There is no fruit which varies more in quality than the Mango. The best are equal to a delicious peach, while the common kinds have not inaptly been likened in taste to a mixture of tow and turpentine. We have never but twice tasted fruit from any tree that did not have a slight flavor of turpentine, but as one of these trees is in our own orchard and has a reputation in the neighbourhood as the best Mango in Para, we can indulge our taste for Mangoes to its full extent. This fruit is, however, not considered very wholesome, and although the natives eat it freely, the stranger, until fully acclimated, should beware of Mangoes. The Mango season is from December to March, but in the climate of Para this fruit, like many others, can be had in greater or less quantity at all seasons.—*Am. Garden*.

PRICES OF CANNED GOODS.

The following are the quotations for these goods on the 4th of September last as reported by *The Wine and Fruit Grower*, published in New York :

Canned Fruits.—Apples, 3 lbs., \$1 10 ; gallon, \$3 25. Blackberries, 2 lbs., 80c. Blueberries, 2 lbs., \$1 30. Cherries, white, 2 lbs., \$1 85 ; red, \$1. Damsons, 2 lbs., \$1 ; egg plums, 2 lbs., \$1 50 ; green gages, 2 lbs., \$1 50. Gooseberries, 2 lbs., \$1. Peaches, standard, 2 lbs., \$1 40 ; seconds, \$1 20 ; standard, 3 lbs., \$1 90 ; seconds, \$1 50 ; pie, 3 lbs., \$1 10 ; 6 lbs., \$1 75 ; gallon, \$3. Pineapples, standard, 2 lbs., \$1 40 ; Bahama, \$2 25. Pears, common, 2 lbs., \$1 25 ; Bartlett, \$1 50. Quinces, heavy syrup, 2 lbs., \$1 75. Raspberries, 2 lbs., \$1 80. Strawberries, 2 lbs., \$1. Whortleberries, 2 lbs., 90c.

Canned Vegetables.—Asparagus, 3 lbs., \$3. Beans, Lima, 2 lbs., \$1 20 to \$1 15 ; string, 75c. ; Boston baked, Lewis, 3 lbs., \$1 60 ; do., Curtice, \$1 60. Corn, Winslow, 2 lbs., \$1 35 ; Burnham & Morrill, \$1 25 ; New York State, \$1 10 ; Baltimore, 90c. ; Harford Co., 95c. Peas, marrowfat, 2 lbs., \$1 10 ; early June, \$1 25 ; sifted, \$2. Pumpkins, 3 lbs., \$1 ; gallon, \$3 25. Squash, 3 lbs., \$1 40. Succotash, Baltimore, 2 lbs., \$1 30. Tomatoes, standard, 2 lbs., 85c. ; 3 lbs., 95c. to \$1 ; seconds, 3 lbs., 75c. ; standard, gallon, \$3 15.

Fish.—Lobster, 1 lb., \$1 50 ; 2 lbs., \$2 40. Mackerel, 1 lb., \$1 15. Oysters, standard, 1 lb., 92½c. ; 2 lbs., \$1 60 ; light weight, 1 lb., 52½c. Salmon, 1 lb., \$1 40 ; Columbia river, \$1 50 ; to arrive, 1 lb., \$1 45. Sardines, quarters, 11c. ; halves, 17½c. ; quarters, American, 6½c. ; halves, 10c.

The same authority gives the following statement of the present condition and outlook of the canned goods market :

FRUIT.

Apples are short, both in New York State and West, and present prices are not likely to recede.

Blueberries are short also, and have advanced 10c.

Cherries also short, and are held firmly at \$1 45 to \$1 50.

Plums are short in New York State, but a fair crop South and in California.

Gooseberries are plenty, and lower.

Peaches short in Delaware, Maryland, and in the West, and have advanced 5c. to 10c.

Pineapple stock is fair ; no change.

Pears.—Standard goods are lower by 5c., and new stock abundant.

Raspberries.—A large pack in New York State.

Strawberries not very abundant, and pack light.

VEGETABLES.

Asparagus.—About fair stock, and prices range from \$2 75 to \$2 90.

String Beans.—A large crop, and lower than ever before.

Corn.—Reports from Maine and New York State show backward condition of the crop ; the output is large, and if frosts hold off, the crop will be equal to demands.

Peas.—A very light crop, and large stock of Junes lower than marrows.

Pumpkins.—Fair crop.

Squash.—Light crop, and prices higher.

Tomatoes somewhat of a conundrum, but believed to be about the same as last year.

BOOK NOTICES.

LOVETT'S ILLUSTRATED CATALOGUE for Autumn of 1883, is very handsomely got up, with numerous nicely executed cuts of fruits, &c., and full of information about new and old varieties.

FORESTRY is the title of a monthly magazine, edited by Francis George Heath, and published by Wm. Rider & Son, London, England, and to be had of L. Van Nostrand, 23 Murray Street, New York. The August number contains among other very interesting papers one from the venerable William

Little, of Montreal, on the alarming destruction of the White Pine in American forests.

SCIENCE for August 24th has a very interesting paper on the ice-huts of the natives of North Hudson's Bay ; but its great attraction is the papers read before the American Association for the advancement of science at its recent meeting. It is published weekly at Cambridge, Massachusetts, by Moses King.

MILFORD'S MICROCOSM, edited by A. Wilford Hall, Ph. D., is published every month by Hall & Co., 23 Park Row, New York, at \$1 per year. Its scientific discussions are very interesting, even though they strike often at the root of our early lessons in philosophy. It teaches that every force in nature is as really substantial as are the trees, rocks, &c., of the material realm. For example, sound is not air waves breaking upon the tympanum of the ear, but a substantial entity.

DIO LEWIS' MONTHLY for August is before us, in which many valuable suggestions are given in a very readable form, concerning the laws of life and health. We are not convinced that horseback exercise is an unfailing cure for consumption, though we have no doubt of its being a very healthful exercise. The Insane Asylum reminiscence, if not fiction, indicates that these institutions need most thorough supervision. We had supposed that the foolish fashion of tight lacing was exploded, and its injurious effects so well understood that further lecturing on this subject was not needed. We commend the article on Woman's figure to the perusal of those who favor wasp-waists. The article on the function of sunshine deserves to be generally read and pondered. Published by Clarke Bros., 68 and 69 Bible House, New York.

MISCELLANEOUS ITEMS.

INSECTS ON ROSES.—Vick's *Monthly* states that a good remedy for the insects which infest the rose, is to syringe both surfaces with a solution of whale-oil soap, using one pound of the soap to one gallon of water. Another remedy is kerosene mixed with an equal quantity of milk, a spoonful of the mixture being then stirred in a gallon of water for syringing. In a few hours wash off either of these applications by syringing with clear water. Caution is recommended in the use of carbolic acid on plants, as it will destroy them if used too freely. It is advised to mix a few drops in soap suds made from soft soap, and try its strength on weeds.

DECORATIVE TREE PLANTING.—The Commissioners of the Woods and Forests, of England, are trying to plant a large extent of crown lands in the Isle of Man with forest and ornamental trees. The experiment, which is watched with interest not only by those who follow sylviculture as an art but by many who regard with apprehension the gradual denudation of forest and woodlands, leads *Land* to comment on the growth of a taste for planting; for transforming into artistic plots grounds which are ill-favored and uninviting; for digging lakes and forming cascades, resulting in magnificent combinations of sylvan charms.—*American Garden*.

A GERMAN INSECTICIDE.—The *Reper-toire de Pharmacie* quotes, upon the authority of Dr. Nessler, a receipt for an insecticide which is said to have a great reputation among German horticulturists. It consists of soft soap, 4 parts; extract of tobacco, 6 parts; amyllic alcohol, 5 parts; methylic alcohol, 20 parts; water to make 1,000 parts. The extract of tobacco is made by boiling together equal parts of roll tobacco and water for half an hour, adding water for what is evaporated. The soft soap is first dissolved in the water with the aid of a gentle heat, and the other ingredients are then added. The mixture requires to be well stirred before used, and is applied by means of a brush or a garden syringe fitted with a small rose.—*Scientific American*.

PIPER'S SEEDLING STRAWBERRY.—This is a remarkable berry. It has the greatest vitality of any strawberry in cultivation; the plants stand our coldest winters without protection, and stand our severe hot summers, and continue to make plants when others die on the same ground along side of it. The fruit is firm, and can be shipped a long distance. The fruit has been ready to pick on Friday, and it set in raining, and it rained for two or three days, so as to prevent the fruit from being gathered until Monday, when it has been gathered and hauled fourteen miles, and then it sold readily at 15 cents per box, by the crate, when others were selling at from 10 cents to 12½ cents, at retail. It is unsurpassed for canning and preserving. It is believed the berry can be shipped 500 miles, and arrive in good condition. The fruit is large, some berries measuring 2½ inches in diameter. The fruit is fine, sweet, and of delicious flavor. Taking all things into consideration, we think the Piper cannot be excelled.—S. W., in *Fruit Recorder*.

ROSES ON ARBOR-VITÆ.—One of the prettiest, certainly one of the most striking, combinations seen for some time we (*Irish Farmer's Gazette*) saw this last week at a villa residence near town. Immediately in front of the house and just outside the carriage ring stand two fine old specimens (companion plants) of the American Arbor-vitæ (*Thuja occidentalis*). Near one of the two at some time a plant of the old cluster Rose, *Rosa multiflora*, was growing, which, inclining to fraternise with its American cousin, extended a feeler shoot, which was favorably welcomed by the friendly conifer, the result being a picture of shrub and floral beauty in combination. When at this season the somewhat sombre, irregular, and picturesquely broken surface of the *Thuja* is garlanded with the snowy Rose wreaths which burst out here and there, and in striking contrast of color, hang from or drape the dark spray of the friendly tree, it forms one of the prettiest and most striking combinations imaginable—a combination, too, like many another happy one, the result of accident rather than design.



VEGETABLES.

THE

Canadian Horticulturist.

VOL. VI.]

NOVEMBER, 1883.

[No. 11.]

VEGETABLES.

If fruits have been found conducive to human health and happiness, and worthy of attention from learned societies and of the fostering aid of the state, so vegetables also deserve a place in our considerate regard as having likewise much to do with the comfort of man. The beautifully colored plate that accompanies this number brings before us at a glance very many of the productions of the garden that in spring-time, in midsummer, and in autumn have both graced the table and satisfied our desires. What more delicious in the first really warm days of spring than that asparagus which the artist has so properly, as we think, represented in buds and stalks of green? Let them eat white asparagus who may, we would not deprive them of the pleasure if they can find it; but to our taste it is far more delightful in flavor when grown in the genial sun-light, its bitter changed by that mysterious alchemy to sweet. Then how much better than preserves are those rosy tinted round and oval radishes, grown quickly in some warm, sheltered nook, tender and crisp, delighting the eye and the palate as well. That sweet-corn also, which an

English writer, envying us our sunny climate, styled food fit for the gods; is there anything more delightful to the hungry soul, smoking hot and redolent of its peculiar perfume? Those midsummer days are all too few in which we can pluck ears of corn, tender, juicy, rich, and sweet. They who like may cut the kernels from the cob, but its highest flavor is enjoyed by those who can adopt a more primitive style. Then the artist, with an appreciation of excellencies that shows him to have been well acquainted with his subject, has given us the Hubbard squash, the richest, sweetest and best of all our autumn squashes. Let more southern latitudes boast their yams and sweet potatoes, they do not compare in richness of flavor with this northern vegetable. And as for celery, that is strictly a production of our north temperate zone, yielding its delicate spicy flavor only in the cool autumnal weather, when the fierce heats of summer are passed away and the latter rains bathe the plants with frequent showers.

Thoughtful observers have maintained it to be a fact that our daily food has much to do with what we are as mental and social beings; that the con-

tinued consumption of coarse food, as pork and potatoes, gives a coarseness to our natures, while on the other hand the daily use of these fine vegetables tends to human refinement and elevation. We are inclined to believe there is much of truth in this opinion; at least we do find that men of refined minds and tastes very generally cultivate these fine vegetables and make them a very considerable portion of their daily food. Again, as refined taste pervades society, our vegetables are not estimated in proportion to their bulk. It is no longer the largest possible size without reference to fineness of grain, and delicacy of structure that now receives the prizes at the exhibitions of horticultural productions. These monstrous growths, with their coarse fibre and coarse flavors, are turned over to the exhibitions of stock feeding roots, where, if anywhere, they belong. Horses and cattle may be able to masticate and digest them.

In the cultivation then of our vegetables for table use we will aim at the production of fine grain combined with tenderness and flavor. To this end we will use fertilizers that have been properly prepared by composting until they are no longer rank and coarse, and in such quantity as experience has taught us will, in our soil, produce quick growth without coarseness. Frequent stirring of the soil by means of hoe or cultivator greatly conduces to this result, and a mellow surface is of as much, if not of more importance than the application of fertilizers.

EXPERIMENTS IN TREE GROWING.

BY P. E. BUCKE, OTTAWA.

In the autumn of 1872 I procured from the woods near by some butternuts (*juglans cinerea*) which I immediately planted. I wish here to state that all tree seeds and nuts should be planted so soon as ripe, whenever that may be; if not, their vitality is either altogether destroyed or much impaired. They all came up in the spring of 1873. One of these, which has been twice transplanted, is now, at ten years of age, two feet three inches in circumference at one and a half feet from the ground, and is thirty-four feet high. It began to bear nuts at seven years of age. Had this tree been grown in a grove for timber, instead of for ornament, it would have been much taller, as the branches would have been trimmed off higher up the stem, and the trunk would have been drawn more to the light. These butternuts are the oldest lot of trees I have on my place grown from the seed. Maples of the same age are not half so thick through, though nearly as high. The butternut is a very quick growing tree, and well repays by its thick and graceful foliage any care that may be bestowed upon it. The timber and nuts are both valuable, and considering the ease with which they may be obtained, it is certainly most extraordinary that they are now becoming so scarce. A few acres of these trees in rows ten or twelve feet apart would be a magnificent sight.

Whilst in Toronto in the autumn of 1876, I procured some horse chestnuts (*æsculus hippocastanum*). The trees are now seven years old, and are ten inches in girth and twelve feet high, having been twice transplanted. They do not grow nearly so fast as the butternut, and are not very satisfactory in this cold climate.

One of the most rapid growing trees of the hard wood varieties is the ash leaved maple, or box elder (*Negundo aceroides*), sometimes called the Manitoba maple. I obtained seed of these in the autumn of 1881, and planted them so soon as gathered in October. The trees on which the seeds are growing should be carefully watched from day to day to ascertain when they are plump and begin to fall, at which time they should be at once collected and planted one and a half or two inches deep. In the spring of 1882 these seeds came up as thick as peas in a row, and so soon as they had the seed leaves and one other expanded, they were taken up and set in a row six inches apart. The growth does not appear to have been checked by this operation, as they are now some of them eight feet high at the end of the second year's growth, and are one and a half inches through. This variety is at present being set out as the future shade tree of Manitoba. In Winnipeg, Portage la Prairie and Brandon, streets are being lined with them, and in spite of the past dry season they are doing remarkably well. Very few are dead which were planted this spring, showing that they bear transplanting very well. These trees grow very profusely along all the streams of Manitoba and the North-west, and may be seen there entwined with wild hops and grape vines. The wood of this tree is valuable for fuel, and sugar is made from its sap. A few acres would be a great acquisition to any farmer, either in Canada or the North-west, for fuel, shelter or sugar.

Black walnut (*Juglans nigra*) two years old from the seed are two and one-half feet high, and appear to be quite hardy here, though, of course, this cannot yet be determined with certainty, as they were well covered by snow last winter.

The elm (*Ulmus Americana*) grows

nearly twice as fast as the sugar or the soft maple, it is not so subject to borers, and is a more graceful street tree. In the American towns the elm has the preference over all others, and in my opinion justly so, as it has many estimable qualities.

The white native birch (*Betula papyracea*) also makes a very pretty street tree, but for some reason is seldom planted; growing side by side with the elm on my place there is very little difference in size or height between the two. The birch has a thicker, closer head than the elm, and its leaves remain green longer in the autumn than the latter tree.

So far all attempts to grow the sweet chestnut (*Castanea Americana*) here have failed. The foliage and flowers are both very ornamental, and the tree is well known for its fruit. It should be grown by all lovers of trees further west.

From the small experience I have had in growing trees, I find there would be no trick in clothing this country, if required, with a dense forest during the life time of any one who had reached his twenty-fifth year, provided he attained the age of three score years and ten. If a proper selection of trees were made, and the ground put in good condition for planting, I believe that in five years from the sowing good saplings could be had for sale to parties who did not wish to take the trouble, or had not time to grow them from seed; ten years would give timber suitable for fence posts; fifteen years for fuel or railway ties, sugar making, and a variety of other uses; and a sufficient supply of nuts and seeds could be grown to enable the cultivator to enter into a tree seed business, for which there will be a large and increasing demand before many years are over. It would be well for the Ontario Government to start a tree.

farm to supply trees and seeds, if no one else will go into the business; a practical demonstration is now all that is required to set tree growing going on a large scale.

REMINISCENCES OF MOBILE.

MR. EDITOR,—It was my privilege to pay a flying visit to Mobile, Alabama, in the last days of February, 1883, and it occurs to me that a brief description of what I saw at that time might be of interest to your readers.

The present population of Mobile is estimated at about thirty thousand, of which fully ten thousand are blacks. The general appearance of the city is not one of great enterprize and thrift; its buildings are not imposing, nor is there the stir and activity at the wharves which one sees in the cities of the north and west. The double row of earthworks on the landward side is still to be seen, though broken and worn by time, where the slaves toiled by night and by day until they died by hundreds from fatigue and exposure. The labor might have been spared, for the Northern army never stormed the ramparts. Admiral Farragut entered the harbour that was so securely fortified and filled with sunken torpedoes as to be thought impregnable, with his fleet one day, and the city was at the mercy of his guns.

The trees and plants that grow about this city, which by the way is one of the oldest on this continent, are particularly interesting to one whose life has been spent amidst the vegetation of Canada. Some of the grandest specimens of the *Magnolia grandiflora* are to be found on the shell-road just out of the city, where stands a grove of them, many of the specimens being fully eighty feet high, and supposed to be

not less than one hundred and fifty years old. I measured a few of these monarchs and found them from four to four and a half feet in diameter. Here, beneath their shadow, I found the beautiful *Magnolia glauca*, whose northern limit extends into New Jersey. A very noticeable feature in the woodland landscape at this season of the year is the *Ilex cassine*, covered with berries of brilliant red. The most common street tree is the Chinaberry, *Melia azadirach*, which has been introduced on account of the beauty and perfume of its flowers, but which at this season of the year is by no means of an attractive appearance, being disfigured by the masses of dried berries or seeds which remain upon it all winter. The Live Oak, *Quercus virens*, seems also to have been planted as a shade tree, at least some most magnificent specimens are to be found on the streets and in the suburbs. I paced the spread of one of them and found its branches extended over a diameter of twenty feet, with a circumference of over two hundred feet. What a grateful shade when the summer sun is in the zenith, but at the time I stood beneath its spreading branches admiring its magnificent proportions, a north-easterly wind was blowing and an overcoat was not uncomfortable. That the readers of your magazine may have some idea of the appearance of these fine oaks, I send you a cut of one that stands not far from the residence of that eminent botanist who has done so much for the science of forestry in the Southern States, Doctor Charles Mohr, of Mobile. And should you ever visit this ancient city, especially if you desire to study the flora of this region, do not fail to make his acquaintance; you will find him a genial gentleman, who will take a pleasure in placing his vast stores of botanical knowledge at your command. The picture will also give you an idea

of life at midwinter in this southern clime.

Another species of oak which is very abundant here and throughout this region is known as the Water Oak, *Quercus aquatica*. The leaves of these oaks are quite unlike those of our Canadian

them the long leaf Pine, or Southern Pitch Pine, *Pinus australis*. It is a tree of lofty growth, with a tall shaft like the mast of a vessel, stretching upwards without a branch for many feet. Doctor Mohr assures me that they not uncommonly reach to the height of a



EVERGREEN OAK IN MOBILE.

Oaks, being much smaller and entire, not cut at the edges. It were difficult to one accustomed only to the oaks of our forest to accept these small leaves with regular outline as those of an oak but for the unmistakable acorns and cups, which at once satisfy all doubts.

The Cotton Wood, *Populus monilifera*, also grows here, but the trees I saw were of very modest dimensions. And here I formed the acquaintance of a new race of pines, foremost among

hundred feet and over. From him I learned that the forests of this long-leaf Pine in Alabama form four separate regions, the maritime region, the central pine belt, the forests of the Coosa river, and an isolated forest in Walker County, covering an aggregate of twelve thousand square miles, and computed by him to yield an amount of merchantable pine equal to 19,000,000,000 feet, linear measure. Notwithstanding which, he says that the

constantly increasing inroads into these forests for the production of naval stores will in a short time lead to the complete exhaustion of these vast resources, without any hope of their restoration. Next to the long-leaf Pine in importance is the short-leaf Pine or Soft Yellow Pine, *Pinus mitis*, which forms a considerable portion of the forest growth in the upper part of the Coast Pine belt, and of the upland in the northern part of the State. It is scarcely inferior in the quality of its timber to that of the long-leaf Pine. I also saw here a few specimens of the Loblolly Pine, *Pinus taeda*, whose lumber is fit for only inside work.

The principal horticultural industry here seemed to be the growing of cabbages, beets, cucumbers and Irish potatoes. I saw farms covered with cabbages, some of them full grown, others just approaching maturity. These are shipped by the car-load to Cincinnati, Chicago, Philadelphia and New York markets and bring remunerative prices. The cucumbers were yet under small frames covered with cotton cloth as a protection from possible frosts. Doctor Mohr informed me that according to the observations of the Mobile Signal Station, the average temperature from October to December, was 54° Fahrenheit, and from January to March it was 52°. It seldom falls lower than 28° at any time during the winter, and rises occasionally as high as 72°. The Irish potatoes, as they are called to distinguish them from the sweet potatoes, were at the time of my visit about a foot high. These come in about the middle of April, and are also shipped to northern markets. I did not see any large plantations of strawberries, which ripen here in March. The soil did not seem to me to be at all equal to our own in quality, yet by the use of phosphates these truck farmers are producing surprising crops. The rain fall

from January to March, inclusive, averages 18 inches, which is favourable to the production of fine crops of vegetables during this part of the year.

It was my privilege also to visit some of the parks and flower gardens in the vicinity of the city, and it was a novel experience indeed to walk among avenues of Oleanders, and in groves of Camellias, these now indeed beginning to drop their petals, yet still gorgeous with their lovely flowers; the air laden with the perfume of the Fragrant Olive, mingled with the odor of roses, which were here blooming in greatest profusion. Here I saw fine specimens of Laurestinus just coming into bloom, with Pittosporums, Vincas, and Fig trees the latter just putting forth their leaves, while a *Rhyncospermum jasminoides* clambered upon the verandah trellis.

The Pecan, *Carya olivæformis*, I also saw growing here, though I believe that it must have been introduced. Its home seems to be in Western Texas, below latitude 32°, from whence large quantities of the nuts are exported, reaching an annual value of from \$50,000 to \$60,000. It is now being cultivated in Louisiana for the sake of the nuts, growing rapidly and bearing fruit at about four years after being planted.

I was informed that the residents are now seeking to encourage immigration, and to that end are circulating pamphlets in English and German, setting forth the advantages which they can offer to both capitalists and laborers to come and settle among them. Cotton is no longer king. A mixed husbandry, adapted to the peculiarities of that climate, is now accepted to be the necessity of the country. The old time residents are not sufficiently skilled in general agriculture to develop fully the resources of that land, and to bring out its capabilities; hence, they long for the settlement among them of skill-

ed and enterprising cultivators. As these must come from more northern climes, they will doubtless find that they have much to learn in the way of adapting their new methods to the circumstances, and although standing on vantage ground by reason of their general knowledge of the subject of land tillage, it will probably be found that it will require the time of one generation to fully ascertain the particular crops and best methods of cultivation to yield the most remunerative returns.

Yours, B.

IN MEMORIAM.

Mr. James Little, the Nestor of Canadian Forestry, died at his residence, Cote St. Antoine, Montreal, on the 2nd of October, 1883, at the age of eighty years. He was born near Londonderry, Ireland, and came to Canada in 1823, being then only nineteen. In 1833 he was married to Annie Youell, daughter of William Youell, Esq., of Thorold. He was extensively engaged in lumbering and was the first to send lumber to the markets of the United States.

About ten years ago he commenced to write on the subject of forest protection and the importance of curtailing the cutting of our commercial woods, raising a warning voice against the reckless waste that was rapidly destroying an important source of national wealth. In recognition of his labors in this direction the American Forestry Congress awarded him a special vote of thanks.

In the August number of *Forestry*, published in London, England, 1883, at p. 243, is a vigorous article on the "alarming destruction of American Forests" from the pen of his son, Mr. William Little, in which he sets forth the present condition of the White Pine forests of the United States and Canada,

and shews from unquestionable data that at the present rate of destruction it will require but seven years to exhaust the supply of White Pine timber. We commend the article to the careful perusal of every one. The mantle has fallen from the father upon the shoulders of the son, may he be long spared to continue the work of arousing the attention of our people to the great importance of preserving and continuing this source of our wealth.

DECIDUOUS FLOWERING SHRUBS AND PERENNIAL PLANTS.

THEIR HARDINESS, AND ADAPTABILITY FOR
THE DECORATION OF THE PARK
AND GARDEN.

There is nothing in cultivation to excel hardy shrubs, and perennial plants, for the decoration of the Park and Garden. Their hardiness, beautiful varieties of foliage, flowers, and their handsome as well as graceful forms of growth, place them first on the list for decorative purposes. There is at present in cultivation such an extensive variety of both the shrubs and plants, that there is no difficulty whatever in selecting varieties most suitable to soil, situation, and climate, and by a judicious selection of the same, a continual succession of bloom may be kept up during the whole floral season. One great point in favor of the shrubs and plants is, that when once planted and taken root there is very little trouble beyond a slight covering of the shrubs, for protection from frost in severe northern climates. The covering may be done with old mats or straw. Shrubs too large to bend down should be drawn together as close as possible without breaking the limbs. Tie with strong cord, and cover. It is necessary that the covering should be done before the severe frost sets in, and left on in spring till all danger of frost is over, as it is the continual freezing at night

and thawing during the day that does the most harm to both the shrubs and plants. It is necessary that the shrubs should have a shortening in spring. Cut all dead wood out and shorten small wood back close; also shorten the flowering wood slightly. The forms they may be used in are numerous and varied, such as ribbon-lines, beds, clumps, or singly on the lawn. In using on the lawn, shrubs with remarkable foliage should be selected, such as *Cornus variegata*, *Weigelia variegata*, *Berberis purpurea*, &c. In using them in ribbon lines, beds or clumps, the tall varieties are selected for the back ground or centre of bed, and the next taller on down to the edge or border. The varieties should be so dispersed as to form an even display of bloom as well as a continual succession of the same over the entire shrubbery. As climate, soil and situation have a great influence on the growth and height of both the shrubs and plants, it is impossible to lay down precise limits for the same. As some seasons vary greatly from others, so their time of flowering may be earlier or later according to the season, consequently it is impossible to expect them to flower the same time every season. The shrubs and plants will thrive in almost any soil, providing it is not very poor. In planting, mix in some well decomposed manure or old hot-bed mould along with the soil at the time of planting; water in dry weather. The whole secret of success lies in the tasteful arrangement of shrubs and plants according to their various forms of growth, colors of flowers, foliage, wood and heights, and so blended as to form a contrast, both in flowers, foliage, and wood. The following are the names of some of the shrubs and plants most worthy of a place in the Park or Garden, and which have proven quite hardy, with but a slight protection during the winter, as

far north as Ottawa, Ontario. There are some of the shrubs and plants that need no protection whatever. They are marked thus* :

SHRUBS.

* *Berberis vulgaris*, *Canadensis*, *alba*, *purpurea*; *Berberis*.

* *Cornus sanguinea*, *variegata*, *mascula*—Dogwood.

Deutzia scabra, *gracilis*, *erecta*, *crenata*, *plena*—*Deutzia*.

Hydrangea hortensis, *paniculata*—*Hydrangea*.

* *Syringa Emodi*, *alba*, *purpurea*, *persica alba*, *sinensis*, *speciosa*, *Washington*, *Grandiflora*, *sanguinea*—*Lilac*.

* *Philadelphus cornarius*, *cordatus*, *floribundus*—*Mock Orange*.

Pyrus japonica, *alba*, *rosea*—*Japan quince*.

Ribes sanguineum, *aureum*—*Currant*.

* *Spirea prunifolia*, *abovata*, *grandiflora*, *callosa*, *alba*, *crenata*—*Bridle Reed*.

* *Viburnum grandiflorum*, *opulus*—*Snow-ball*.

Weigela rosea, *splendens*, *alba*, *grandiflora*.

PERENNIAL PLANTS.

* *Aconitum album*, *longiflorum*, *napellus*—*Monkshood*.

* *Anemone palmata*, *vernalis*—*Wind-flower*.

Antirrhinum, different kinds—*Snapdragon*.

* *Aquilegia arctica*, *grandiflora*—*Columbine*.

Arundinaria variegata—*Ribbon Grass*.

* *Aster Gmellus*, *bicolor*, *grandiflora*—*Michaelmas Daisy*.

* *Bellis perennis*, different kinds—*Daisy*.

* *Campanula pyramidalis*, *rotundifolia*—*Bellflower*.

* *Convallaria majalis*, *multiflora*—*Lily of the Valley*.

* *Dielytra erimia*, *spectabilis*—*Bleeding Heart*.

* *Dictamnus*, *Fraxinella*.

* *Galanthus nivalis*, *flore pleno*—*Snow-drop*.

* *Helleborus atrorubens*, *bivideris*—*Christmas Rose*.

Hemerocallis aurantica flava—*Day-lily*.

* *Iris bicolor*, *pumila alba*, *persica*—*Fleur de luce*.

* *Lychnis chalcidonica*, *haggeana*, *alba*—
Flower of Jove.

* *Narcissus*, different kinds.

Peonia arborea, *alba*, *grandiflora*.

* *Phlox nivalis*, *ovata*, different kinds.

* *Pansy*, different kinds.

* *Salvia azurea*, *officinalis*.

* *Sedum montanum*, *ternatum*.

* *Spirea japonica*, *speciosa*, *umbrosa*.

* *Viola arborea*, *odorata*, *alba*.

THOS. E. DAVIS.

Ottawa, Ont.

THE FORESTRY EXHIBITION.

Arrangements are being made for the holding of a Forestry Exhibition sometime in the summer of 1884 in the City of Edinburgh, Scotland. The following notice is taken from the *Garden* :

"Quietly, but energetically, the executive committee charged with the arrangements for this undertaking are pushing forward the preliminary measures necessary to ensure its success. Without any direct appeal to the public, the guarantee fund has already mounted up to about £3,500. While no date has yet been fixed for the holding of the exhibition, it is generally understood that the most suitable period for it will be the months of July, August, and September next year. Entries, it is said, will close on the 1st of March next. The nature and scope of the exhibition will, perhaps, be best understood from the following abstract of the proposed classification :—

"In Class I., 'Practical Forestry,' will be exhibited implements, tools, &c., used in forestry, draining, and enclosing, models of foresters' huts, charcoal kilns, and timber slips, plans of river embankments, rafts, and appliances for floating timber, models of machinery for transporting timber and transplanting trees, sawmills, wood-working, and pulp machinery of every description, and fencing materials."

"Class II., 'Forest Produce,' will embrace collections of timber specimens and ornamental woods, woods used for ordinance, for railway purposes, and for pavements, cooperage, wood carving and turnery, basket and wicker work, fancy wood work, wood engraving, tanning and dyeing substances, barks, including cork fibres and fibrous substances, material for paper manufacture, gums, resins, wood oils and varnishes, &c."

"Under Class III., 'Scientific Forestry,' will be ranked botanical specimens of forest flora, microscopic sections of woods, fungi and lichens injurious to trees, forest fauna injurious to woods, useful and noxious insects, preservative processes applied to timber, geological specimens and diagrams illustrating the different formations adapted to the growth of trees, fossil plants, and trees found in bogs."

"Class IV., 'Ornamental Forestry,' will consist of growing specimens of rare and ornamental trees and naturalized species, in tubs or otherwise, rustic work, arbours, seats, bridges, &c."

"To Class V., 'Illustrations of Forestry,' will be relegated paintings, photographs, and drawings of remarkable and historical trees, foliage and scenery, illustrations shewing the effects of blight, accident, or any abnormal condition, and sketches of work and operations in the forest."

"In Class VI., 'Forest Literature,' will be found forest reports of forest schools, forest periodicals, and other publications, treatise on measuring and valuing wood, forest floras of different countries, treatise on fixation of dunes and on ancient and extinct forests, working plans of forests and plantations on estates, valuations, surveys, &c., maps and charts illustrative of the geographical distributions of forest trees and their altitude."

"Under Class VII. will come essays and reports on specific subjects for which premiums are offered. Under Class VIII. loan collections. Under Class IX. economic conditions of foresters and woodmen. Class X. will contain miscellaneous exhibits.

Among the places from which exhibits have already been promised are Ceylon, the Andaman Islands, Jamaica, Canada, California, the United States of America, and New South Wales; while the famous forestry schools of France and Germany are expected to be adequately represented, as is hoped may be also the forests of Norway and Sweden, Cyprus, Greece, and Italy. Application has been made to the heads of the forest departments in the different Presidencies of India, and many of those gentlemen, being personal friends of the members of the committee or of the honorary officials, are expected to render hearty co-operation. Communications have also been addressed to various foreign ambassadors, with a view of obtaining for the exhibition the recognition of their respective Governments; and thus far the results in this direction have been of the most satisfactory character. The literature of the subject is likely to be illustrated by reports of the schools of forestry in all parts of the world; and in this connection occasion will be taken to show the strong claims which Edinburgh has for the establishment of such a school, while abundant material for the practical education of students is to be found all over the country. Closely allied to this branch of the subject is the preparation of plans showing the age of trees and the stage of growth at which cutting should be, or has been, resorted to—a mode of procedure which is said to be confined in Scotland to the Grantown estate of the Earl of Seafield, under the management of Mr. J. G. Thompson, though the practice is

said to be largely and advantageously pursued in other parts of the world. By the preparation of such plans the proprietors of forests are said to have been led to take a greater interest in the woods on their estates, and so have been enabled the better to direct their management, preventing over-felling in some seasons, guarding against overcrowding at other times, and thus rendering the plantations less liable to the ravages of such a gale as that of October 14, 1881. The loan section of the exhibition will, it is anticipated, prove to be one of the most attractive of all, including, as it is expected to do, notable specimens of carving, wood engraving, and several other kindred arts, from various quarters.

STRAWBERRY NOTES FROM OHIO.

EDS. COUNTRY GENTLEMAN—Among the new strawberries, the *Manchester* has impressed me so favorably that I would have no hesitation in planting it largely, and correspondents in many parts of the country have sent me favorable reports. It is a good grower and bearer, the fruit large, regular, good in color and fair in quality. It will not surprize me if the *Primo* proves to be the most valuable of the new varieties. It seems to have all the good points of the *Manchester*, with better flavor and perfect blossoms. The *Jersey Queen* is the only one on my place entirely free from rust at this date. The fruit is large and excellent. The "Big Bob" is small and poor in other localities, but better with me. From what I have seen I expect a great deal from *Arnold's Pride*. The *Mrs. Garfield* is but little known out of my own place. I raised it from Crescent in 1878, and it proves a good healthy grower, abundant bearer, blossoms perfect, berries medium to large, bright red, excellent in quality. George W. Campbell calls it the best flavored of all the large varieties. I

have fruited the *Daniel Boone* seven seasons, and it has never disappointed me. It was our main dependence this season. The fruit is very large, regular, bright red, good in flavor; plants pistillate. Charles Carpenter of Kelly's Island says it will yield as many quarts as the Manchester.

Of the well known varieties, I regard the Cumberland, Hart's Minnesota and Mount Vernon as the best three. Hart's Minnesota is one of the earliest and remains in bearing a long time.

The strawberry crown-borer is spreading rapidly, is very destructive, and its habits not generally understood. The larvæ are carried all over with potted plants.—M. CRAWFORD, in *Country Gentleman*.

CULTIVATION OF CURRANTS.

The currant has always been a universal favorite, not so much perhaps because of the real nature of the fruit as because of the extreme hardness of the bush, which hitherto has withstood a good deal of neglect, with little or no attention. After once planting them in some remote corner of the garden, or under the fence, they were let severely alone. But with the currant, as with other things, as soon as they become scarce, the demand for them will increase, and better prices rule. My plan of cultivation—which I do not claim as the best, but which has always succeeded with me—is simply this: As soon as the leaves are off the bushes in the fall, I go through them with a sharp knife and trim out the old branches, and any of the new that show signs of the borer, and cut back all new shoots one-third. I then rake up all the wood that has been cut out, and burn it to make sure of destroying all insects that might cling thereto. This done, I work in *deep*—usually with the spade—three or four shovelfuls of good, well-rotted barn manure around each bush to the

space of about three feet; the ground between the rows is now either plowed or spaded, and the whole given a liberal top dressing of light manure, and the work is done for the winter.

As soon as the first worms appear in the Spring—which is early—I take a heaping tablespoonful of powdered white hellebore, and thoroughly wet it with boiling water—a quart or so. I now turn this to a pail of clean cold water, stirring constantly all the while, till every particle of the powder is well mixed. It is ready now for application to the bushes, which is done with a large watering-pot, taking great care to thoroughly sprinkle every bush; repeat this as often as the worms reappear. Usually two applications, one early in the Spring, and the other just before the fruit ripens, are sufficient to keep down the worms. Keep the ground around them mellow and free from weeds, and if at any time through the summer a branch is seen to wilt, it is immediately cut away and burned, as such is the “sign of the borer.”

Following this method of cultivation, I have never lost a bush or had a poor crop of fruit. And I bespeak the same success to any who will take the same trouble for the sake of this delicious fruit. It will pay.—D. B. C., in *Practical Farmer*.

PLANT TREES ON THE ROADSIDES.

MR. ORANGE JUDD advocates tree planting along the highways, in *American Agriculturist* for November. He says: Trees may be planted at a time before the ground freezes solid, or as soon as it fully opens in spring. Early spring would be preferable on some accounts; but if left until then, the hurry of work, often delayed by cold and wet weather, is likely to interfere. It is better, therefore, to get every hardy tree possible into its permanent growing place now. And every year it is

delayed is no trifling loss. A hundred trees can be set at a cost of ten to twenty dollars, or for almost no cost, if one has spare time and the saplings are easily available. These may in ten to fifteen years grow to be worth three to ten dollars apiece for needed timber and fuel, or for the fruit or nuts produced.

It would be greatly to the advantage of the country, its climate, and its beauty, if the sides of our public highways generally were planted with trees that furnished shade and ornament while growing, and supply at no distant period wood for various purposes. Some years before they mature sufficiently to be cut down for use, new plantings alternating with the older trees can be coming forward to take their places, or slow and quick-growing varieties may be set, so that when the latter are removed the former will be large enough to soon fill the gaps. It is desirable, however, to have together those that somewhat resemble each other in form at the top. We have in mind a broad street, ninety feet wide, where twenty-five to thirty years ago various oaks were set, thirty to forty feet apart, ten feet from the outside, and between these, in a line with them, quick-growing maples were planted. Recently the maples were all removed, furnishing a cord of wood apiece, with considerable useful timber, and the oaks now stand in two beautiful rows.

As to loss of land from spreading roots and from shade, if planted a few feet from the fence, the roots can be kept from the crops by a deep furrow along the inside of the fence every year or two, and the shade will not be a serious detriment—none at all from trees on the south side of roads running easterly and westerly. Those on the northerly side of the road furnish a very desirable shade to animals in the adjoining pastures.

OIL FROM SUNFLOWER SEEDS.

The sunflower has long been grown for its oil seeds in Russia and India, and the cultivation has been more recently taken up in Germany and Italy. The plant grows readily in most soils, but prefers light, rich, calcareous land, unshaded by trees. In Russia the seed is drilled into lines 18 inches apart, and the plants are thinned out to 30 inches apart in the rows, thus giving about 11,000 plants in an acre. The quantity of seed required for an acre is four to six pounds, and the sowing takes place in September—October, the crop being ready to harvest in February. In England it is recommended to be planted 6 inches apart and 1 inch deep, and to be earthed up when 1 foot high, requiring no subsequent attention. The yield of seed is much increased by topping the plants, and the best fertilizer is old mortar. Each plant produces about 1,000 seeds, chiefly on the main head.

Experimental culture in France gave a return of 1,778 pounds of seed, yielding 15 per cent of oil (275 pounds), and 80 per cent of cake, from an acre; but the product varies considerably according to soil, climate, and cultivation, and the average may be roundly stated at 50 bushels of seed from an acre, 1 gal. of oil from 1 bushel of seed. The percentage of oil to seed ranges from 16 to 28; and that of husk to kernel from 41 to 60.

The Italian cultivation is confined to the neighborhood of Piove and Conegliano, in Venetia. In Russia the plant is most extensively grown in Kielce and Podolia, and the district of Birch, in Voronej; the production of seed is now estimated at 8,000,000 poods (of 36 pounds), from an area of 80,00 dessatines (of 13,067 square yards). In Tartary and China it is cultivated in immense quantities, but no actual statistics are available. In

India (Mysore) 1 acre of land gives $11\frac{1}{2}$ cwt. of seed, which yields 45 gallons of oil, which is there compared with ground nut oil, and applied to the same uses. Russian seed is expressed on the spot, and the oil is largely employed for adulterating olive oil. The purified oil is considered equal to olive and almond oil for table use. The chief industrial applications of the oil are for woollen dressing, lighting, and candle and soap making; for the last mentioned purpose it is superior to most oils. It is pale yellow in color, thicker than hempseed oil, of 0.926 specific gravity at 15° , dries slowly, becomes turbid at ordinary temperature, and solidifies at -16° C.—*Dru Reporter*.

THE NIAGARA GRAPE.

The *Wine and Fruit Grower*, in a late number, copies some remarks upon this grape from the *National Tribune*, and then indulges in an expression of its own opinion that is more fierce than complimentary. We copy the whole for the benefit of our readers, and thus contribute our mite towards keeping the grape before the public:

For thirty years we have been familiar with grapes, and we have probably tested all the varieties which have been introduced during these years. We have no recollection of any grape being introduced that was not pronounced to be far better than any other; and yet, among hundreds brought forward, but few are really worth growing. Just at present the Niagara is well kept before the public, and judging from the opinions given by those who have tasted the fruit, it would be difficult to say what it is worth as an edible fruit. One will state that it is of the highest quality; another, that it is foxy, of second class; the third will call it good, but not best—and so on. But if it is well kept before the public, we presume its owners will be satisfied.—WILLIAM SAUNDERS, in *The National Tribune*.

[Exactly! And those who have planted largely of this grape, will doubtless be

“satisfied” too, that they have “got left.” We had an opportunity to test this grape, and an “alleged” wine made from it, at the recent meeting of the American Pomological Society, and had hoped to be agreeably surprised by its good qualities. We were surprised. The samples shown were grown at Charlottesville, Va., where the grape ought to do well, if anywhere. But we are compelled to say that neither the grapes nor the wine were calculated to inspire any one with admiration. In short we think it a gross humbug, as bad as it is big, and wholly unworthy of cultivation.—*Wine and Fruit Grower*.

INSECTICIDES.

N. Y. AGRICULTURAL EXPERIMENT STATION,
GENEVA, N. Y., Sept. 29, 1883.

One of the greatest boons to gardening would be the discovery of efficient methods for the destruction of insects, as well as remedies which are easily to be procured and of easy application. This, however, is a difficult matter to accomplish, and upon a view of the season's work we recognize but little absolute success.

The cabbage worms have been abundant and destructive. We have warred against them with tobacco-water, saltpetre, alcohol, boracic acid, bisulphide of carbon, etc., in various combinations, but we finally settled upon an emulsion of kerosene oil and soapsuds as the remedy that, all things considered, was the most satisfactory. It appears that one ounce of common yellow, hard soap, one pint of kerosene oil, and one and one-half gallons of water, well mixed and stirred, and applied by means of a rose from a watering-pot destroys all worms that become thoroughly wet with the mixture, and does not injure the plant. Care must, however, be taken to keep the ingredients thoroughly mixed in the pot, for if the oil is permitted to rise to the surface, so that it will pass out upon a few plants, it will prove fatal to the few, while the remainder will not receive enough of the

oil to destroy the worms. In this case the kerosene is the insecticide, the object of the soap being but to thicken the liquid so as to retard, in a measure, the separation of the oil from the water. A large proportion of the soap makes the water so thick that it will not flow readily through the fine openings of the rose. A large proportion of oil endangers the plant, while a small proportion is inefficient against the worms. There is one caution, however, to be given: If repeated applications of the mixture are made upon the same plants, the more tender varieties will be destroyed or will be injured. We found, on trial, that where one or two applications were made without injury to the plant, a large number of applications blighted the leaves, more or less, and five applications entirely destroyed the early varieties, while large growing and late varieties seemed uninjured even under severe dosing. The growing cabbage furnishes so many hiding places for worms that we cannot hope to destroy them all with a single application, however thoroughly it may be made. The perfect remedy should destroy the worms wherever it touches them, and should not injure the plant in the least under any number of applications.

During the strawberry season we noticed that a decaying strawberry had a great attraction for the wire worm. We frequently found as many as twenty of these worms beneath a single over-ripe decaying fruit. This suggested that it might be possible to entrap the wire-worm, by placing some sweet substance about plants that are troubled by it. Accordingly, on June 25th we placed small lumps of a mixture of molasses and wheat flour about plants of Sweet William in the flower garden, which, from the early spring, had been the favorite haunts of the wire-worm. On June 29th an examination showed

that our trap was a success, and we counted thirty-five worms under a lump of the mixture, the size of a silver dollar. We next collected a large number of the worms and placed them with a small quantity of soil on an earthen seed-pan, and placed on the soil a lump of the same mixture, with a little Paris green added. The mixture attracted the worms as before, but, to our surprise, it did not kill them. We confined them for a week in the pan, but did not see that they diminished in numbers.

One part of Paris green mixed with 200 parts of ground limestone proved entirely successful against the larvæ of the potato beetle. Great care is, however, required to secure a thorough admixture of the two substances where so small a proportion of the poison is used. In this dilution Paris green seems to lose its danger to the human family, as we can scarcely imagine injurious results coming from its use, to the careful man,

Bisulphide of carbon applied to the soil about the roots of squashes for destroying the squash-borer, *Aegeria cucurbita*, had no visible effect in diminishing their ravages. Paris green, mixed with water, at the rate of 1 part of the former to 600 of the latter, by weight, and carefully applied to the stems of squash plants, seemed to be of benefit. We commenced using about August the 20th, taking great care to first remove every borer from the stems. We have since found but few borers in the plants treated with it, although the plants were of those varieties very subject to their attacks. A careful examination made September 5th, discovered but two borers in 8 plants, while other plants in the same row, to which no application had been made, contained from 1 to 3 borers each. The Paris green and water was applied in this case with a watering-pot having a small

rose with the apertures facing downwards. The stems were wet for a distance of about two feet from the base of the plants.

We have also made another experiment upon the squash-borer, which seems to promise valuable results. This is the application of a solution of a sulphate of iron about the roots. We used this solution upon five vines about August 22nd. The first plant treated was of the Hubbard variety, and four were of the Essex Hybrid. All these vines had been infested by borers, and at the time the application was made four of them were almost destroyed by them. The borers were very carefully removed by splitting the stem lengthwise to the centre and picking out the animal with a pair of tweezers. The solution was then poured about the roots of the plant, sprinkling it upon a circle about four feet in diameter, taking great care not to allow any to touch the leaves. In these plants we have found no borers since the application was made. The vines quickly assumed a deep green colour and are still growing vigorously. The proportion used was one-fourth pound copperas dissolved in a gallon of water, and a gallon of the solution was used for each plant.

We do not deem these experiments with the squash-borer as in any sense conclusive. We hope to make careful verifications of them the coming season. We offer these results of limited trials, hoping that persons interested in the culture of squashes might aid us by practical trial.

E. LEWIS STURTEVANT, Director.

HOW TO SUCCESSFULLY TRANSPLANT TREES.

Many think it cheaper and better to take up large trees from the woods, and transplant them to their grounds or to the road-side, than to buy nursery trees. As a rule such trees die; they fail because proper precautions have not been taken. In digging up the tree, all the roots outside of a circle a few feet in diameter are cut off, and the tree is reset with its full head of branches. Whoever has seen trees in the forest that were upturned by a tornado, must have been struck by the manner in which the roots run very near to the surface, and to a great distance. When the roots of these trees are cut off at two or three feet from the trunk, few or no fibrous or feeding roots are left; and if the mass of top is left, the expansion of buds in the spring will not be responded to by a supply of sap from the roots, and death must follow. If such trees have the tops completely removed, leaving only a bare pole, they will usually grow when transplanted. The tree is little more than an immense cutting; but there are roots enough left to meet the demand of the few shoots that start from the top, and growth above and below ground are well balanced. We have seen maples, elms, and basswood trees, fifteen feet or more high, transplanted in this manner, without a failure. Some trees treated in this manner were planted in our neighborhood about ten years ago. They have now as fine heads as one would wish, and show no signs of former rough treatment. Trees in pastures, or on the edge of the woods, are better furnished with roots. These should be prepared for transplanting by digging down to the roots, and cutting off all that extend beyond the desired distance. This will cause the formation of fibrous roots near the tree. It will be safer

HYDRANGEA PANICULATA GRANDIFLORA is one of the most beautiful of hardy shrubs. It is now producing great massive panicles of pure white blossoms. It is dwarf in habit and flowers most freely.

to take two years for the operation, cutting half of the roots each year. Such trees may be removed in safety, especially if a good share of the top is removed at transplanting.—*American Agriculturist for October.*

PYRETHRUM, OR CHRYSANTHEMUM CORYMBOSUM.

This is a robust herbaceous plant with elegantly cut foliage and white and yellow flower heads, known also in gardens as *Pyrethrum corymbosum*. Under cultivation it grows about 4 feet high, and probably higher in rich soil. It is as hardy and persistent as the allied species, *C. Parthenium*, syn. *Pyrethrum parthenium*, of which the Golden Feather is a variety. In a wild state it grows from 1 to 3 feet high, and it is a common plant in Central and Southern Europe, ranging from Portugal to Switzerland, Austria, and Turkey.

The insecticide and insectifuge qualities of the dried and finely powdered flowerheads of different species of *Pyrethrum* and the harmlessness of the powder to man, to other animals, and to plants, have long since been known. Used against various household pests, under the names "Persian insect powder" or "Dalmatian insect powder," it has hitherto been put up in small bottles or packages and sold at high prices. The so-called Persian powder is made from flowers of *Pyrethrum carneum* and *P. roseum*, while that from *P. cinerariæ-folium*, a native of Dalmatia, Herzegovina, and Montenegro, is more generally known as Dalmatian powder. Some interesting experiments made during past year on different insects by Mr. William Saunders, of London, Ontario, show that the use of this powder may be satisfactorily extended beyond the household, while a series made by Professor Riley in the summer of 1878, with the same powder on the cotton worm, showed it to have striking destructive powers,

the slightest puff of the powder causing certain death and the almost instant dropping of the worm from the plant. Repeated on a still more extensive scale the present year at Columbus, Texas, the powder proved equally satisfactory in the field.

Here, then, we have a remedy far exceeding any other so far known in efficacy and harmlessness to man and plant, and the only question has been to reduce its cost. Mr. Milco, a native of Dalmatia, has been cultivating the *P. cinerariæ-folium* in California in constantly increasing area for the past three years, and deserves great credit for his efforts in introducing it. The insect powders made from the California grown flowers have proved to be very effective.—*Scientific American.*

THE BANANA.

A slight description of the banana as it is seen growing may be interesting to some who enjoy its delicious substance without knowing what form it presents during the primary stages of its growth. The stem of the plant is not woody, but consists of the footstalks of the former leaves wrapped round each other, and it rises to the height of twelve or fifteen feet. The leaves are very large, of a long, oval form, five or six feet in length and beautifully green in color. The middle rib of the leaf is tough and strong, but the rest of its substance is thin and delicate, and is easily torn by the wind alone, in a direction at right angles with the rib.

The manner in which the fruit is developed is quite interesting. From the midst of the leaves, and at the top, appears a large, smooth, purple cone, hanging down gracefully at the end of a stalk. The flowers are all wrapped up in this cone, which consists of a large number of closely packed spathes. By-and-by the uppermost of these

sheathes disengages itself from the rest, curls up, and discloses a row of three or four long blossoms, with the young fruit of each beginning to form.

While this row of fruit is tender, the spathe remains hanging over it like a roof, but when the fruit has acquired some size and strength the protecting shield drops off, and the next in order rises up, with a similar row of young fruit, over which it stands in the same watchful attitude, till it also drops off to be succeeded by another. When one circle of fruit is completed, another is commenced below, and in due time another; while the common stem around which the fruit is disposed grows constantly longer and the cone of spathes diminishes in size till it is all unfolded, and a monstrous bunch of bananas is finished, which seldom weighs less than twenty or thirty pounds and sometimes as much as seventy or eighty. Of all kinds of vegetable nutriment the banana is perhaps the most productive, and most easily raised.

After a plant has produced its bunch of fruit, the stem is either cut, or is suffered to wither and fall on the spot. In the former case, it is good fodder for cattle; in the latter it forms good manure for the young shoots which are springing from the root, and which are soon ready to bear fruit in their turn. From these shoots or sprouts the plant is propagated.—*Michigan Farmer.*

THE SOUTHERN FRUIT SHOW.

At the great fruit show made at the Southern (Louisville) Exposition on August 29th the Fern Creek (Ky.) Fruit Growers' Association took the first premium of \$500 for the best display of fruit, having over 1,700 plates of fruit on exhibition. The Davidson County (Tenn.) Society took all the premiums for the best ten varieties of

apples, and also first premium on several single varieties.

The display of grapes is said have to been very fine indeed, comprising over one hundred varieties. The premium for the best new grape was awarded to the "Julia," a seedling grape originated by John Hege, of Tennessee, said to be much larger than the Concord or Worden, and in quality fully equaling either of these sorts. The variety which can thus stand prominent above all others out of over fifty new kinds, each claiming excellence in some marked particular, must indeed be a fine grape, and we shall wait with interest to learn more of its character and merits.

MIMULUS CUPREUS BRILLIANT.

The pretty little coppery red *Mimulus* has been a favourite with most people ever since it has been introduced from the Chilian Andes, and the attention bestowed upon the raising of it from seed has resulted in obtaining several distinct and beautiful varieties. The older forms of it are *tigrinus* and *variegatus*, both with flowers quaintly and brightly spotted, and the double variety or rather a hose-in-hose kind. All these are distinct from the type itself, an extremely pretty plant, but all surpassed in brilliancy, neat and compact growth, and floriferousness by the new variety which Messrs. Carter have obtained and named Brilliant. We lately saw a broad mass of this *Mimulus* in full flower at their St. Osyth seed grounds, and thought at the time that we had rarely seen a more glorions bit of colouring, viz., a glowing crimson-red inclined to orange as near as one can describe it. There were thousands of plants in the quarter just alluded to, all without exception being not more than from 4 inches to 6 inches in height, spreading, and forming a dense tuft, pro-

fusely studded with flowers. It is, indeed, a valuable plant, and one that could be made to produce a bright effect in a garden if properly placed; but to obtain the best results from it, it must be seen *en masse*, say in a bed 6 feet square, and it never looks better than when placed in a retiring nook, not too shaded, on a lawn surrounded by greenery, and rising from a carpet of grass. It is a plant which does best in a moist loamy soil, and which well repays good culture. It is a perennial, and quite hardy enough in England to last several seasons, and the best plan is to raise seedlings of it in autumn and plant them out the following spring.—W. G. in *The Garden*.

THE EARLY PEACHES.

A few years ago we counted up about fifty named varieties of the very early peaches, a considerable number of which claimed to be earlier than all the rest, and all as early as the Amsden. H. M. Engle of Marietta, Pa., wrote to the *Gardener's Monthly* a year ago, that he had fruited twenty-six varieties of these early peaches and they had borne on his grounds from two to ten years. He regards the method which he adopted as the only true one for testing comparative earliness, namely, fruiting them on trees of other varieties ripening at the same period. Dates of ripening have been changed every year, and he has given up saying positively which is the earliest, but he is satisfied that the twenty-six sorts tested do not vary three days in maturity. His experience of this year confirms this opinion. In size, appearance and quality, they prove to be so near alike, that he is sure he could select specimens of any which would puzzle good judges. He is still waiting for a freestone to make its appearance as fine and as early as the earliest. In his statement last year, he named the following which did not vary

three days, namely, Amsden, Alexander, Wilder, Musser, Bowers' Early, Baker's Early, Alpha, Governor Garland, Sherfey's Early, Nectar, Early Canada, Waterloo, Downing, Saunders, Cumberland, Honeywell, Climax, Briggs' May. The first eleven named have leaves with globose glands, Waterloo has reniform glands, and the six named last are glandless with cut leaves. Mr. Engle finds that comparative earliness varies in different seasons with the same varieties, on the same ground, and in the same trees; and hence we may conclude that some years will yet be required to place all in their true position for merit and early maturity.—*Country Gentleman*.

HARDY FERNS FOR SHADED GARDEN.

One frequently hears the remark made that plants do not succeed in certain gardens, but on inquiry it generally turns out that the plants selected have not been suited to the positions they occupy. Although some plants delight in abundant sunlight, others are equally at home in deep shade, and it is only by observation as to what conditions are most favorable for certain plants, and selecting them accordingly that success can be achieved. In this locality, wherever the situation is open to sunshine, bright-flowering plants are the favorites, and thus many of our villa gardens are kept gay nearly the whole year round, the latest Chrysanthemums not being long removed before early flowering bulbs and many other plants are in blossom. But all gardens cannot have full south aspects, and it is refreshing on bright summer days to find instead of summer bedding plants gardens in shady places filled with the verdant foliage of hardy Ferns and of other plants that dislike sunshine. When well established it is surprising how effective even the commonest of our

native Ferns are planted in shade, and how beautiful they make many an otherwise uninteresting corner look; even little borders by hard paved yards or ground beneath large trees where nothing else will grow may be made cheerful by means of Ferns. Get together a few of the largest and roughest stones that can be obtained, and a load or two of good soil; make irregular mounds here and there, and on these plant the Ferns. Intermix with them a few dwarf trailing plants, keep them well watered, and they will soon produce a striking effect.— J. GROOM, in the *Garden*.

AUTUMN HINTS FOR KITCHEN GARDEN.

In a well-managed garden, as soon as one crop is off, the ground is made ready for another, if the season allows. In stiff soils, especially, plowing or spading, and leaving them rough through the winter, greatly improves them.

Preserving roots in winter.—Parsnips, salsify, and horseradish are not injured by hard freezing: all others must be stored for the winter, and a sufficient supply of the hardy kinds should also be taken up. We have described various methods of storing roots in back numbers of the *American Agriculturist*. If the cellar is not too warm, a supply for present use may be kept in boxes or barrels, and covered with earth, to prevent shriveling.

Cabbages.—The usual method is to pull the cabbages, set them in a dry place, heads downwards, and on the approach of cold weather, cover with a coating of leaves up to the ends of the roots; light soil often used instead of leaves. For family use, it is convenient to dig a trench where water will not stand, and set the cabbages, with what soil adheres to the roots, close together, upright, in this. Make a sloping cover-

ing with boards. As cold weather comes on, place a layer of leaves or straw over the heads. Soft cabbages thus treated will very often form firm heads by spring.

Asparagus and Rhubarb.—Though these plants are quite hardy, the beds will produce all the better and earlier if they have a covering of three or four inches of manure. All litter should be first cleared off, and if not already done, the asparagus tops should be burned.

Crops Wintered in the Ground, such as spinach, sprouts, onion sets, etc., will need two or three inches of leaves, straw, or marsh hay, as a protection during winter, in all but very mild localities.

Cold Frames.—Novices are more apt to injure the cabbages, cauliflower, and lettuce plants wintered in these by keeping them too warm than by too much cold. The object of the frames is, not only to prevent too severe freezing, but all growth, and to keep the plants in a perfectly quiet or dormant state. The sashes should not be put on until really freezing weather, and on mild days must be tilted, to allow ventilation.—DR. GEORGE THURBER, in *American Agriculturist* for November.

ELÆOCARPUS CYANEUS.

A COMPACT-GROWING, free-blooming, very sweetscented plant, well suited for greenhouse cultivation, and easily kept in health. We have recently seen several specimens of this species, both at Kew and elsewhere, clothed with pretty drooping, deeply fringed flowers, and surrounded with a most delicious fragrance. The blooming period for this plant extends over two or three months of the summer, and is followed by a thick crop of bluish berries like small Sloes, and which are in themselves very attractive. Taken altogether, this plant is deserving of a much more prominent position as a garden plant than

it appears to occupy at present. It reminds one of an old favorite greenhouse plant, viz., *Clethra arborea*, but surpasses it in its crop of ornamental berries and the pleasing fragrance of its flowers. Although there are about half a dozen specific names attached to this genus in gardens, they are capable of being reduced to two, viz., *E. dentatus* and the subject of our article. Altogether there are some fifty species of *Elæocarpus* distributed over Tropical Asia and Australia. Many of them are found in India, where they form beautiful trees, bearing in many cases racemes of berries as large as a Black Hamburgh Grape. The freedom with which they produce their flowers in a young state renders them available for pot cultivation, and where room can be spared for them to develop themselves they form handsome evergreen shrubs when planted out in a greenhouse border.

E. CYANEUS is an old garden plant, having been cultivated at Kew and elsewhere eighty years ago. Its foliage is very leathery in texture, and the nerves are conspicuously reticulate. The flowers are pure white, and each petal is divided into about a dozen acute lobes, which give the flowers a most delicately fringed appearance. The figure in the *Botanical Register* named *E. reticulatus* is *E. cyaneus*. It is a native of Australia, about Queensland, New South Wales, and Victoria.

E. DENTATUS is an Indian species, distinguished from the above by its brown bark, the silkiness of its branches when young, and the silky down which clothes the underside of the foliage. The flowers are smaller than those of *E. cyaneus* and not so deeply fringed.

The propagation of these plants may be effected by means of cuttings, which strike freely at any season of the year, or by sowing the berries in the spring,

when they germinate freely and grow quickly into flowering plants. A loamy soil suits them, and plenty of water should be given at all seasons of the year. An ordinary greenhouse temperature will be found suitable for them.—*The Garden*.

BOOK NOTICES.

TRANSACTIONS AND REPORTS of the Fruit Growers' Association of Nova Scotia, 1883.

PROCEEDINGS of the American Association of Nurserymen, Florists and Salesmen for 1883.

AMERICAN TREASURY OF FACTS, statistical, financial and political. H. H. Warner & Co., Rochester, N. Y.

MINERAL RESOURCES of the Dominion of Canada, specially adapted for capitalists and settlers: Ottawa, 1882.

THE CALLIGRAPH QUARTERLY, 25cts. per annum, A. J. Henderson, 77 St. Patrick street, Toronto, General Agent for Canada.

BOOK OF ENGRAVINGS, by A. Blanc, 314 North 11th Street, Philadelphia, 1884, electrotypes of which are for sale by the publisher.

SHORTHAND WRITER.—A monthly eight page paper devoted to the interests of shorthand writers, published by D. P. Lindsley, Plainfield, New Jersey.

FORESTRY IN EUROPE, and other papers, by B. G. Northrop, Secretary of the Board of Education, published by Tuttle, Morehouse & Taylor, New Haven, Connecticut.

THE FLORAL WORLD is a new monthly, published at Highland Park, Illinois, at \$1 a year. The first number is well filled with information of special interest to the lovers of flowers.

AUTUMN DESCRIPTIVE CATALOGUE and price list of American grape vines, small fruit plants, trees, &c., of George

S. Josselyn, Fredonia, N. Y., the introducer of Fays' Prolific Currant.

THE SWINE BREEDER'S MANUAL.—A treatise by Phil. M. Springer, Springfield, Illinois. Price 25 cents. Treats of selecting stock, care of young pigs, guarding against disease, &c., &c.

CATALOGUE OF FOREST PRODUCTS, Grasses and other Forage Plants, minerals and products of the mines of Alabama as shewn at the Southern Exposition, Louisville, Kentucky, prepared by Dr. Chas. Mohr, of Mobile.

DIO LEWIS' MONTHLY for October has very interesting papers on the Human Brain, Treatment of Prisoners, Treatment of the Insane, House Drainage, The Check Rein, Beer, Nursing, &c. They will well repay careful consideration.

WILLIAM RENNIE'S AUTUMN CATALOGUE of choice Holland Bulbs, imported by Mr. Rennie, Seed Merchant, corner Adelaide and Jarvis Street, Toronto, 1883, contains hints on the cultivation of the hyacinth, tulips, crocus, &c., and will be sent free to any of our subscribers on application.

REPORT of the Department of Agriculture and statistics of the Province of Manitoba for the year 1882. At page 47 it is stated that the Champion Grape is the best variety for cultivation in that Province, that this variety introduced there under the name of Beaconsfield does not require to be covered in winter.

HORSES, THEIR FEED AND THEIR FEET, is a valuable duodecimo of 150 pages, written by a physician who has studied the physiology of horses, and here discusses the relation of feed to work, the best kinds of feed, when and how to feed, diseases and treatment, &c. Published by Fowler & Wells, 753 Broadway, New York. Paper 50c., cloth 75c.

THE AMERICAN AGRICULTURIST for November has been received. The editors claim that it is not only superior to any other issue of that periodical issued during its forty-three years of existence, but is far superior to any number of any similar journal in the world. They certainly have presented an amount and variety of matter which, considering the price of the periodical, is remarkable.

EXPERIMENTS IN AMBER CANE, and the ensilage of fodders, at the Experimental Farm of the University of Wisconsin, Second Annual Report, containing also instructions concerning the soil best adapted to the cane, use of fertilizers, preparation of the soil, selection of seed, variety to plant, planting, cultivation, stripping, cutting, care of the cane after cutting, &c. It appears that there was made in the State of Wisconsin in 1882 four hundred and ninety-one thousand and two hundred gallons of syrup. In the report on experiments with ensilage, we find that thirteen rows of fodder corn converted into ensilage lasted two cows seventy days, the same quantity equal every way to that made into ensilage, but shocked, bound into bundles and housed, lasted two cows forty-seven days. The two cows fed with dry fodder yielded in 42 days, 1,322 lbs. 15 oz. of milk and 53 lbs. 5 oz. of butter; the two fed ensilage yielded in the same time 1,456 lbs. 8 oz. of milk and 59 lbs. 8 oz. of butter.

ANNUAL ADDRESS of President Marshall P. Wilder before the American Pomological Society at its session in Philadelphia, September, 1883. The following portion of his address is not only deserving of careful perusal, but should stimulate our Canadian Fruit Growers to renewed and continued efforts to produce new fruits:

"It is now more than thirty years

since I first called the attention of this Society to the great importance of producing fruit from seed, in order to originate and obtain such varieties as might be adapted to the varied climate and sections of our ever-increasing and immense territory.

"It has long been known that varieties raised on our own soils, and in our localities, are generally better suited to our various regions than those from foreign lands, and although we have some varieties from abroad of great excellence and wide adaptation, there are, comparatively, only a few out of the thousands of foreign kinds which we have proved in the last fifty years, that now remain in general cultivation. Formerly the accessions to our catalogue were from the Old World; now they are mostly of American origin, and so it will continue to be in future time. These are benefactions not only to our country, but the world. He that originates a new and valuable fruit, suited to general cultivation, is as much a benefactor of mankind as he who discovers a new principle in science which increases the comfort and happiness of our race.

"Natural fertilization, unaided by the hand of man, is as old as creation; but the knowledge of manual fertilization, the ability of man to assist nature in the process of improvement, seems to have been mostly withheld from us until the present age. Wonderful is this fact, but it is not more so than the unlimited extent to which it may be carried by the genius and sagacity of him who would co-operate with nature in this enchanting labor.

"Strange, indeed, that this art should have been held in suspense for so many ages, nor until our own time to be brought into practical use. But, thanks to the Disposer of all temporal concerns, it has now come as the harbinger

of a progress which is to revolutionize and improve the fruits of the earth while time shall last. Thanks, too, to Knight, Herbert, Lindley, Darwin, Gray, and other teachers of later time, for the lessons of wisdom, which have encouraged us to prosecute this most noble work.

"The process of fecundation was known far back in the centuries of the past, but not for the production of new and improved varieties of plants. From the days of Pliny, to the present time, the custom of suspending the blossoms of the date palm over the trusses of the fruit-bearing trees, was known to be necessary for the production of fruit. So Tournefort and Linnaeus understood the sexual order of plants; but we have no facts to show, so far as I know, that either of these writers had a knowledge that the crossing of different species and varieties would produce from the seed a new variety which would possess in a greater or less degree the characteristics of the parent plants, and it is doubtful whether Duhamel, Van Mons, or Noisette, was acquainted with this wonderful art for the indefinite improvement of our fruits.

"This is the art that doth help nature, and great as has been the progress in our time, it is but as the dawn of that day when every section of our varied climes shall be furnished with products of the earth as well adapted to each as the people who inhabit them. How grand the acquisitions of this art in our day! It is only about fifty years since Mr. Hovey, myself, or other cultivators of our country, attempted the hybridization of fruits or flowers. Now the knowledge of this art is as well understood as the cultivation of the soil. These are the means provided by an all-wise Providence for the improvement of our fruits. Would that Prince, Downing, Brinckle, and those other pioneers who have gone before us, could now

witness the amazing advances which have resulted from their labors in this cause. O that I could live to participate a little longer in the glorious harvest which is to be gathered from the influence of this art in improving the fruits of our land. These are benefactions which you will leave for the generations that are to follow you—memorials of your love of nature, of home and kindred, which shall live in the hearts of grateful millions, long after you shall have been sleeping in the dust.

"Thus have I spoken for a long course of years of the importance of this branch of our duty. Thus would I preach while life may last. *'Plant the most mature and perfect seeds of the most hardy, vigorous and valuable varieties, and as a shorter process, insuring more certain and happy results, cross and hybridize our finest kinds for greater excellence.'* And should my muse be able to reach you from the spirit land, she would, as with telephonic voice, still chant in your ears the same old song,—

'Plant the best seeds of every good fruit,
Good fruits to raise, some lands to suit;
Fruits which shall live, their bounties to shed,
On millions of souls, when you shall be dead.
These are creations that do the world good,
Treasures and pleasures, with health in your food;
Pleasures which leave in the mem'ry no sting,
No grief on the soul, no stain on Time's wing."

BEST WAY OF FEEDING ROSES.—Mr. Pettigrew, of Cardiff Castle, who lately received the gold medal of the National Rose Society and a silver cup for the excellence of his rose blooms, told me the other day that he never at any time dug amongst his rose trees, but fed them sumptuously by means of surface mulching and heavy top-dressings. That this treatment suits them admirably there can be no doubt, as of all the rose plants I

have seen this season or for some years back none have been so strong and healthy as those at Cardiff Castle.—CAMBRIAN, in *The Garden*.

JACKMAN'S CLEMATIS.—This well-tried old variety is of all garden Clematises perhaps, so far, the best for general decoration. It grows freely in rich deep soils and is at home everywhere in beds or borders, on wires or other trellis work, or on old tree stumps, dead bushes, or as trained on walls. The other day I saw a plant of it which had been planted along with the silvery-leaved variety of *Acer negundo*, and the effect was very pretty; but on a wall, along with golden-leaved ivy, the plant is still more showy, and in Battersea Park it is effectively combined with bushes of the golden-leaved Elder. Now, of course, we shall all be very anxious to secure the white-flowered *C. Jackmanni alba*, for which Mr. Noble received a first-class certificate at South Kensington quite recently. Planted together, the purple and white forms would be most charming. How rarely now-a-days do we see the double variety of *C. Viticella*, which is most floriferous and of a mouse-coloured purple hue.—*The Garden*.

ROSA RUGOSA.—Mr. Harvey, Aigburth, Liverpool, sends us some uncommonly fine fruiting and flowering specimens of this valuable Japanese Rose cut from a bush two yards across. On the same branch with the hips are some flowers and buds, and these will be continually produced until late in the autumn. All who do not know this rose should make its acquaintance next season. Also flowers of this rose, both white and crimson, together with some very fine clusters of other fruits, have been sent to us by Lady Parker, from her garden at Stawell House, Richmond, Surrey, where this rose is now in great beauty. The fruits or hips are particularly handsome; they are as large as the largest sized Cherries, but more depressed in form, and of a bright orange-red colour, which contrasts strikingly with the deep green of the broad foliage. These are by far the handsomest rose hips we know of, and even if this rose did not bear such beautiful flowers as it does, it would be well worth growing for the beauty of the hips alone.—*The Garden*.

THE LAY OF THE ANCIENT HYBRIDIST.

BY P. E. BUCKE, OTTAWA.

A comic scientific poem, read before the winter meeting of the Fruit Growers Association at Toronto, February, 1883.

In the days of Columbus, so well known to fame,
Who over to Cuba did gallantly pass,
There lived a botanical, physicist, man,
Who did much to improve our whole garden "sass."

He lived in the light of sunnier climes,
Some thousands of miles from this beautiful town:
He grew luscious greens for the sake of the dimes,
And he met with a large and increasing renown.

But selections and hybrids were chiefly his plans,
To secure the results which his mind had conceived,
He didn't care much for old nature's poor shams;
In the best that would flourish he only believed.

He thought on this question by night and by day,
In the old Alexandrian library he read
All those classical books which philosophers say
Would addle one's fancy, or quite turn your head.

In the study of Greek he made a long pause
Over Anaximander, that wonderful man,
Who believed that condensation of air was the cause
Of the world bodies formed on an aeriform plan.

His conceptions were clear, fundamental and bold,
The development theory he knew to be true,
And by deep cosmological knowledge he told
That the spheres when first formed were excessively few.

Heraclites, that sage was no myth to his mind;
In currents dame nature conceived, was his view;
The father of all was the struggle of kind,
Perpetual change making everything new.

Empedoclese taught accidental conjuncture
Of forces which act and react, was the cause
Of the first germs of life on this globular structure,
Which slowly developed by physical laws.

That the forms which existed in ages of old
Were produced out of matter which never has rest,
And that those which survived were the fittest he
told,
To exist in the future as being the best.

The conclusion he came to when study was o'er,
Was to "go it alone," as we say in this age;
Cut out a new road in the hybridist lore,
So that next generations might call him a sage.

So he set himself down to steady hard work,
To cross a large fowl with a suitable vine,
And he swore that his duty he never would shirk
Until mind and matter closely combine.

To come at this wonderful comical trick,
Of a miracle, chemical, monstrosity,
He thought himself hoarse, and he got pretty sick,
It haunted him so in the land by the sea.

The pollen he chose was the yolk of an egg,
Hard boiled and rubbed down into powder so fine,
That it looked like the stuff which sticks to the peg,
Or the style of a flower on which the bees dine.

A gourd was procured with a stamen whose cavern
Could swallow whole gravel and not mind the load,
Into this our scientist brushed in his pollen,
And waited results with the patience of Job.

To his joy one fine day at the end of September
He passed by his gourd on his way to his swine,
When he heard the "cheep, cheep," of a chick
young and tender,
And he knew it came from his hybridized vine.

To say that he sprang twenty feet in the air,
Would perhaps be a little o'erstepping the mark;
But surprise and confusion did raise up his hair,
And his sensitive organs gave him a rough jerk.

But collecting his senses and looking around,
He found that his brain-box had led him astray,
For the old "yallar" hen that had been found,
Having made her a nest in the cool on the clay.

Like Jonah, she hatched in the shade of her vine,
And brought out her chickens in comfort and ease;
She never once thought of the science sublime,
Which grows drumhead cabbage on root of sweet peas.

The man of deep thinking was awfully sold,
Kept dark on his plans for improving the race,
Lest his friends should combine, and turn him in out
in the cold,
And his enemies give him a much warmer place.

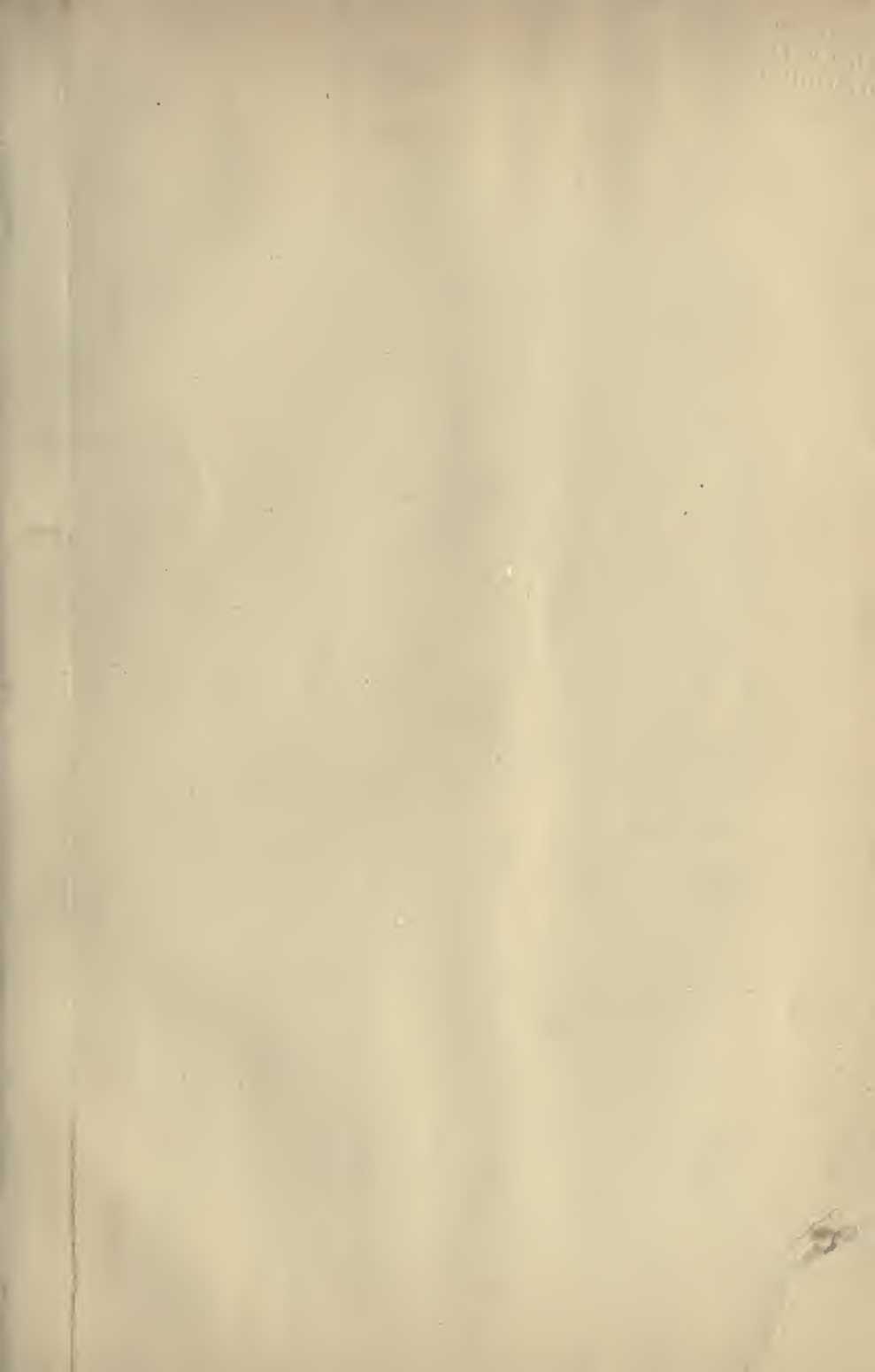
MORAL.

Stick closer to nature, you then may succeed
In developing something that's really some good;
But to cross a shanghai with a pumpkin indeed,
Would produce wings and giblets, but next to no food.

NOTE.—Anaximander, who lived 625 B. C., assumed that out of infinity of matter through eternal revolutions, numerous world-bodies came into being as condensations of the air, and that the earth, too, as one of these world-bodies, issued out of a state originally fluid and afterwards aeriform. He also taught the theory that the earliest living creatures on this globe originated in water from the action of the sun. From these creatures, later on, were developed the land inhabiting plants and animals, which left the water and adapted themselves to life on dry land. Man likewise, gradually worked himself up from animal organism, and, in reality, from fish-like aquatic animals.

One hundred years later, Heraclites of Ephesus, propounded the principle that a great uninterrupted process of development pervaded the whole universal world, that all forms are involved in everlasting currents, and that struggle is "the father of all things," seeing that nowhere in the world exists absolute rest; that all standing still is but apparent, we are compelled everywhere to assume a perpetual change of matter, a constant variation of form. One form thrusting out its predecessor, the new usurping the place of the old.

Later on, Empedoclese of Agrigent in Sicily, assumed that the everlasting universal struggle was caused by the laws of attraction and repulsion of atoms. He also taught that purposive forms or organisms came into existence through the accidental conjunction of counteracting forces. Out of this great struggle the living forms now existing have issued victoriously, because they were best prepared for the battle, and therefore most capable of life.





SALPIGLOSSIS

THE Canadian Horticulturist.

VOL. VI.]

DECEMBER, 1883.

[No. 12.]

ANNUALS.

One short season and they have finished their life-work. Yet in that short time how much they have done. What beauty and brightness they have given to the home; how many heavy hearts have they cheered, or added pleasure to hours of joy, and given new grace and loveliness even to that already lovely. Places that otherwise were bare they have clothed with beauty, and the evening air has been laden with their sweet perfume. Short has been their life, the summer days have quickly gone, autumn frosts come all too soon, and the bright flowers are blighted and blackened and perished. No, not too soon; that they were to do has been fully done. Let us learn the lesson they teach. December has come. The December of life is coming. Will the life-work have been fully done?

But the Annuals, the summer flowers: in spring we sow the seed, and in a few days they are gladdening our eyes with their beauty. Endless in variety of form and of color, in their adaptation to soil and location, if we but choose aright we may have them everywhere; some prefer to grow in the shade, others in the sunshine; some like a cool, clayey soil, others thrive

best in the hot sand; so that by giving to each the soil and location best suited to their habits we can have flowers to ornament the home, whatever may be the soil or exposure. The variety we now have from which to choose is almost without limit, and one has only to consult any of our seedsmen's catalogues to select those whose habit, season of flowering, and color commend them to notice. In such a paper as this it is possible only to call attention to a few of the many beautiful things that one might plant.

The Abronia is a valuable creeping plant, preferring a light sandy soil and the full blaze of the sun from morn till night. Its habit and general appearance and manner of flowering are much like those of the *Verbena*. The flowers are sweet scented, having a waxy appearance, and are produced in great profusion from June until the frost kills the plants. There are some three or four varieties, distinguished by different names; *Abronia arenaria* has yellow flowers; *A. unbellata* and *A. fragrans* produce blooms of a pale rose color. The seed may be sown late in the fall, just before the ground freezes, or in spring as soon as it has become

settled; but the fall sown seed will usually come soonest into bloom. Our readers will find the *Abronias* of easy cultivation if they can give them a light, and moderately rich soil and full exposure to the sun. The plants will soon cover a large space and need not be set nearer than eighteen inches.

The Aster is already well known and deservedly popular as one of the most attractive of our autumn flowers. This is its season of beauty, when the sun has begun to decline, and the evenings are cool, with abundant dews. Cultivators have succeeded in producing many varieties, some growing quite tall, others very dwarf, and others of an intermediate size, and these with names without end. Those of intermediate habit, and generally known as bouquet asters, seem on the whole to be the best. The aster prefers a deep, rich soil, with full exposure to sun and air, while the roots are kept cool with a thick mulch. The seed may be sown in a good rich seed bed, thinly in rows. Care should be taken that the plants are not crowded at any time. As soon as they begin to crowd, transplant to a permanent bed, placing them about a foot apart each way. A paper of choice aster seed from one of the best growers in Prussia, is one of the three papers of seeds offered to the readers of the *Canadian Horticulturist* in the spring.

Mignonette needs no description to make it known to our readers, its very name is suggestive of sweet perfume. The seeds may be sown in the open ground at any time after the spring opens, either in a shady corner or in

the open sunshine. It thrives best in a rich, friable loam. The individual flowers are exceedingly modest, yet the spike is not without beauty, while its fragrance is prized by every one. It is well to sow a small bed with it every three or four weeks until past midsummer, so that there may be a succession of bloom, for its sweet-smelling spikelets are always in demand.

The Pansy seems to look up at you as though it would speak. And does it not speak, though its voice is not heard, speak to your heart in a way that thrills, stirring many memories; touching perhaps some minor chord in your life's psalm, wakening thoughts of the days and the loved that come not again. It is the home flower, interwoven with all the scenes of home life and all the precious memories and ever to be cherished associations of that hallowed spot.

Though not strictly an annual yet in our climate it is well to treat it as such, and sow the seed in a rich moist loam, shaded from the fierce noonday heat, but not under the drip of the overhanging trees. It likes the cool moist air of early spring and later autumn, then giving forth its largest, richest blooms, but it dwindles and well nigh perishes under our midsummer heat. We have had good success with young autumn grown plants, slightly protected during the winter with a thin covering of leaves, which gave in spring most magnificent flowers in great profusion. The readers of our monthly can have a package of the choicest seed of this flower, if they so choose, raised by the

most skillful pansy-grower in Great Britain.

The Portulaca can not brook the shade, nor smile when the cool air of evening comes on. It revels in the full noontide heat, laughs in the face of the blazing sun, and asks only for clear skies and brightest sunshine. The weather is never too dry and the sun too hot for its comfort. It must have a sandy soil to be satisfied, for it will not thrive in clay or muck. The seed may be sown in the spring after the weather has become warm enough to give some warmth to the ground, and as the weather grows hotter the plants will grow faster, and soon cover the bed with their gay flowers, which are both single and double, and rosy purple, crimson, yellow or rose in color.

The Salpiglossis is better shewn in our colored illustration than by any word picture we can give. The rich and varied coloring of the flowers make them very attractive. The plants thrive best in a rich sandy soil. The seeds may be sown in the spring after the weather has become settled, or if it be desired to have flowers all summer, then sow in pots or small boxes in the house or cold-frame, and transplant when danger of frost is passed. We say sow the seed in pots or small boxes because then the ball of earth can be taken out without breaking; for the *salpiglossis* does not transplant readily, and it is important that the roots should be disturbed as little as possible.

The Drummond Phlox is the rival of the verbena for constant display and splendid color; in most gardens it will

prove even more satisfactory. There is every shade of color, ranging from pure white to darkest crimson. The seed may be sown late in the fall, just before the ground freezes, or early in spring as soon as it can be worked. The plants will begin to flower early in June, and continue to grow and flower during the summer and autumn. They will thrive in any rich friable soil, in the open sunshine rather than in the shade. Very beautiful effects can be produced by planting different colors in broad ribbons, such as scarlet, white and rose. The contrast is very pleasing and will well repay the trouble. A paper of mixed colors of the very best varieties, procured from one of the most eminent growers in Prussia, will be mailed with the papers of Pansy, and Aster seed to those subscribers who choose the flower seeds.

The foregoing are a few out of many beautiful annuals that will not fail to please every true lover of flowers. It is the aim and purpose of the magazine to disseminate a taste for flowers, by teaching how they may be grown, and pointing out those varieties that can be successfully cultivated with no other skill than that born of a determination to succeed. The late James Vick said that the cultivation of flowers is one of the few pleasures that improves alike the mind and the heart, and makes the lover of these beautiful creations of infinite love wiser and purer and nobler. Another has said that what is in our garden is typical of what is in us; if we have taste, refinement, a love for the beautiful and good.

a detestation of the evil and false, our gardens will show. And so the one reacts upon the other; as we exercise our taste for the beautiful and our love of the good in the careful cultivation of the garden, and thus bring ourselves through these creations of Infinite Love into communion with Him who is the source of all that is good and truly beautiful, shall we be changed into the same image, and by means of this communion become ourselves good and therefore beautiful.

MEETING OF THE MISSISSIPPI VALLEY HORTICULTURAL SOCIETY.

(Continued from page 172.)

At the evening session of Thursday, Feb. 22nd, Mr. O. B. Galusha, President of the Illinois State Horticultural Society, read a paper on the question, "Is there a better market strawberry than the Wilson?" After listening attentively to his paper from beginning to end, we were no wiser than when he began, and concluded that he had fully illustrated his own paper by the incident he narrated at the opening, saying that he was in the predicament of the German Magistrate who after hearing one side of a case said to the counsel, "Vell, you be right, anyhow;" but after hearing the counsel for the other side, said, "Vell, you be right too"; so I dismiss the case, and charge the constable with the costs for bringings such a case into court." President Earle introduced to the meeting, upon the conclusion of Mr. Galusha's paper, Professor S. A. Forbes, Illinois State Entomologist, who read an exhaustive paper upon "Insects affecting the strawberry." We shall not attempt even a synopsis of this truly valuable and instructive paper. Those of our readers who wish to pursue this subject, can procure a

copy of the Report of this Society by sending one dollar to the Secretary, W. H. Ragan, Esq., Lafayette, Indiana, in which they will find Professor Forbes paper in full, and very completely illustrated with cuts of most of the insects. This paper was followed by one from Mr. A. D. Webb, of Kentucky, the originator of the Longfellow and Warren strawberries, upon "The best strawberries for home use and for market." With an experience of twenty-five years, he names for home use in his locality, Cumberland Triumph, Warren, Longfellow, Monarch, Charles Downing, Mount Vernon and Sharpless. These have been selected by him after a thorough test through a series of years, (except the Mt. Vernon, which is of but recent introduction,) embracing unfavorable as well as favorable seasons, with an eye especially to hardiness and vigor of plant and reliable bearing, save that in the case of the Sharpless he has found it easily injured by frost and, in a wet season, liable to rot. Nevertheless, he would advise it be planted in every family collection and trust to Providence for deliverance from frost and rot. For near market he said he would add to his family list the Crescent, and for distant market would plant Wilson and Glendale. The Wilson, he said, has outranked all others as a shipper, has proved nearer a success everywhere than perhaps any other, and has been and is yet more extensively grown for market than any other. Glendale has acquired some reputation as a shipper, seems to succeed wherever tried, is a late variety, of large size, and makes a good show on the fruit stands when free from dirt. When dirty it is hard looking, but will wash almost as well as Irish potatoes.

The remainder of the evening was occupied with discussions upon manuring and watering strawberries and the

relative merits of the different sorts. Mr. Galusha, of Illinois, favored liberal manuring, especially with bone dust. Mr. Hollister, of St. Louis, has found the Wilson the most valuable and profitable variety, which was confirmed by Mr. Gibbs, of Chicago.

At the morning session on Friday, Feb. 23rd, the President read a number of letters from distinguished pomologists who were unable to be present, after which the society proceeded to the election of officers for the ensuing year. This was followed by reports from the Committees on Experimental Stations, on Horticultural Statistics, and exhibitions. The latter Committee recommended that exhibitions be held by the Society at least once in every two years. The Hon. F. P. Baker, of Topeka, Kansas, read a paper on "Irrigation in Horticulture." Beginning at the earliest dawn of primeval history, and running along down through Assyria, Egypt, Persia, Syria, China, India, Peru, Mexico, Italy, Spain, Germany, he fully established the antiquity and universality of the practice of irrigation, and proceeded to shew that a large part of Western Kansas and Nebraska, and Eastern Colorado and New Mexico requires irrigation before the soil can be cultivated and made to produce the usual variety of firm products; and that when these shall have been rendered fertile by irrigation, the tornado, born of idleness on a parched, empty and lazy prairie, will become a thing of the past. He concluded his interesting paper by shewing that irrigation is needed wherever water does not fall from the clouds when and where it is required for the development of vegetable growths.

After some discussion of the subject of Mr. Baker's paper, a short paper written by Mr. E. P. Roe, of New York, was read, he being detained at home by sickness. The title was "Small fruits

in the South," in which the writer discussed the necessity imposed upon the Southern fruit grower of seeking to develop a class of varieties suited to his climate. Doubtless Canadian growers will find their advantage in acting upon this suggestion fully as much as the Southern.

At the opening of the afternoon session, Mr. P. J. Berckmans, President of the Georgia Horticultural Society, read a paper upon "the Newer Peaches and new fruits for the Cotton States." In this paper he maintains that the form of the leaves and a very slight difference in the texture of the flesh is all the variations he has been able to detect between the Alexander, Amsden, Governor Garland, Waterloo, Saunders, Downing, Musser, Wilder, Brice, Early Canada and perhaps a dozen others. The Early Louise and the Early Rivers have so thin a skin as to prevent distant carriage. He states that the Flat Peach of China is well suited to the subtropical climate of Florida, where the varieties cultivated by us are not successful, and advises the horticulturists of that State to raise seedlings from this Peen To peach, believing that new and distinct varieties will be obtained giving them a race of peaches as valuable as the Orange. He expressed the opinion that the Japanese Persimmon would prove a valuable fruit especially below latitude 32°. He also gave the history of the LeConte Pear, the original tree of which is yet standing and although now some forty years old has never shewn any sign of blight nor failed to yield a crop of fruit. This seems to be well adapted to the soil and climate of the south where the pears of European origin are a failure. This paper was followed by one on "Pears and their culture in the South," by W. H. Cassells, of Mississippi. Although of great interest to those residing in the south, we did not find anything in

it that would be likely to help the Canadian planter. From the paper and the discussion which followed, we gathered that the pear-blight is fully as troublesome in Georgia, Kentucky and Mississippi as it is at the north.

On reassembling after tea Mr. T. V. Munson read a paper on "Systematic Horticultural progress," in which he suggested that each member take in hand some particular fruit, notifying the Secretary what fruit is being experimented with, and at the meetings present, either in person or by written paper, an account of the work done and progress made, and that from these a year book of progress be compiled. A paper on "Horticulture versus Ruts," was read by T. T. Lyon, of Michigan, in which he sets forth the importance to the cultivator of following the ruts in which his plants and trees run, instead of trying to make them run in his ruts. This was followed by a very interesting paper by Governor R. W. Furnas of Nebraska, entitled "Forestry on the plains," in which he presented his own experience in the growing of trees upon the prairies during a residence of twenty-seven years. Since 1854, there has been planted within the State of Nebraska, 244,355 acres of forest trees, and it is estimated that the indigenous growth since fires have been kept out is equal to half the area planted. In the State of Kansas, there has been planted since the first settlement in that State, 139,995 acres of forest trees. Actual measurement of the growths made at two feet from the ground shew that White Elm in fifteen years from planting attained a circumference of 24 inches; Catalpa Speciosa in twenty years grew to 48 inches; Soft Maple, *Acer dasycarpum*, at eighteen years measured 69 inches; Cotton Wood, *Populus monilifera*, in eleven years, 93 inches; Black Walnut in sixteen years 50 inches; Rus-

sian Mulberry in six years 24 inches, and White Pine in twelve years attained a girth of 29 inches. The State of Nebraska, incorporated in her Constitution a provision that the increased value of lands by reason of live fences, fruit and forest trees grown thereon, shall not be taken into consideration in the assessment thereof; and enacted by statute that one hundred dollars shall be deducted from the assessable value of lands for five years for every acre planted to fruit trees, and fifty dollars for every acre planted to forest trees. Experience has shewn that better results are secured by planting the tree seeds and afterwards assorting into grades, and transplanting each grade by itself in its permanent location, than by sowing the tree seeds where they are intended to remain.

The evening session was closed by the reading of a paper sent by Doctor John A. Warder, of Ohio, on "The influence of Forests on health," in which he treated of the climatic influences of forests, effect of denuding the mountains, shelter belts, and their value in preventing the dissemination of malaria.

OSTRICH FARMING IN AMERICA.

The San Francisco Bulletin tells of a farm in California, on which there are twenty-one Ostriches kept for their feathers. The eggs have not yielded any chicks; why not, is somewhat uncertain, yet it is said that the feather crop pays for keeping the birds, even if no chicks should be raised. It is stated that three pairs of Ostriches have been taken to Florida with the view of ascertaining whether they can be made a source of profit in that climate. It is said that there is now a hundred thousand domestic Ostriches in the African Ostrich farms, whose feather crop is worth four and a half millions of dollars.

VALUABLE INFORMATION CONCERNING VERY HARDY TREES.

The readers of the *Canadian Horticulturist* are aware that Mr. Chas. Gibb, of Abbotsford, Province of Quebec, spent last summer in visiting the horticultural establishments of Europe, and that in a special manner he investigated the fruits and trees of Russia in the hope that he might be able to find some very hardy varieties of good quality which could be introduced into Canada, that would be valuable acquisitions, particularly in Quebec, the Algoma district of Ontario and in Manitoba. From his published notes and letters we here bring together some of the most valuable items of information, which strike us as being specially worthy of attention.

THE SCOTCH PINE, *Pinus Sylvestris*. At the ancestral house of the Vilmorins, those well known seedsmen and nurserymen of France, he found a variety of this Pine of great value, differing in its habit of growth from those that have been imported into this country hitherto, and well worthy of attention. Its habit of growth is upright and straight; the first plantation was large enough for masts of sloops and small schooners. There were plantations from the seed of those planted down to the third generation, and even the third generation of them were from twenty to thirty feet high and as straight as can lles. This form of *Pinus Sylvestris* does not seed as abundantly nor does the seed germinate as certainly as that of the other forms which are comparatively of little or no value, hence the seed of commerce is that of the poorer sorts. This form of the Scotch Pine should be imported and grown in this country that its valuable timber may become a source of national wealth.

THE WHITE POPLAR, *Populus Alba*, var *erecta*. This variety is nearly as

erect in its habit of growth as the Lombardy Poplar and is thought by Mr. Gibb to be very important both as a timber and an ornamental tree. Professor Budd, of the Iowa Agricultural College, who accompanied Mr. Gibb, says that the best forms of this White Poplar will yet become our leading lumber tree for hundreds of economic uses. Already a very considerable demand has sprung up for such wood for purposes of paper making. Cuttings of this Poplar have been ordered from Russia for trial at the Ontario Agricultural College.

THE WEEPING BIRCH, *Betula alba verrucosa*, seems to be a variety of drooping birch, with foliage like our common white birch, which Mr. Gibb thought to be specially desirable. He saw it growing upon the dry soil of the Petrovskoe Park, near Moscow, in which the avenues and groves of this birch formed the most attractive feature, presenting a charming vista of bright, translucent, white barked trunks.

THE APPLE. To his surprise, Mr. Gibb did not find what we call the Siberian Crab in Russia, save in some botanical collections. The apples that prove hardy in their colder sections are quite different races from those grown here or in Western Europe, and he has come to the conclusion that the kind of hardiness we require in an apple tree, that it may thrive in our extremes of hot summers and cold winters, is not to be found in occasional individuals of the races we have, but by introducing the races of North-eastern Russia which there grow in climate so very similar to our own. There seems to be two of these races there, one of them known under the generic name of Anis, of which there are many varieties. This Anis apple he says is the leading apple of the Volga; that in latitude 55° North, in a climate of great extremes,

600 miles further north than Quebec, there are twelve villages where the peasants are growers of this race of apples in large quantities. Another race seems to be designated by the name of Antonovka. It is the leading apple of the vast prairie region that stretches from Tula to the south of Kharkof and from Kozlof to Kiev. He found this apple in latitude 54° north, about 480 miles farther north than Quebec, regarded as their hardiest and most productive apple tree, noted for its length of life, average annual bearing and fruitfulness in old age. The Aport is the name of another family, to which the apple grown here under the name of Alexander belongs. Arabka or Arabskoe is the name of yet another family, seemingly not quite as hardy as the two first mentioned, yet containing some members that are likely to prove valuable here.

THE PEAR. The wild pear he found planted in the public square at Simbirsk on the Volga, as an ornamental tree, where the soil is dry, the summer sun hot, the air excessively dry, and the winters very cold, because it maintained a dark green, glossy, healthy foliage better than any other. The pears were of two forms, one like a Bergamot in shape, small, and very variable in quality; the other pyriform, small and usually too astringent even for cooking. The most hardy variety which he found yielding fruit that is eatable, is the Tonkovietka; next to it in endurance is the Bessemianka, which is considered the best that is grown in the severer parts of Russia.

THE CHERRY. This also appears to consist chiefly of two families, the Vladimir and the Ostheim. Of these the most important is the Vladimir, which is probably so named from the district where it is most extensively grown, there being over a hundred

orchards, each containing fifteen thousand trees. The Ostheim is supposed to be a native of the Sierra Nevada mountains of Spain, much resembling the Vladimir in foliage and habit of growth.

THE PLUM. This fruit was found by Mr. Gibb in Vladimir and Kazan, some red, some yellow, but most were blue, much resembling the prunes of Germany. He thinks some of these Russian plums may prove to be valuable for us. It is doubtful whether they are any more hardy than the Chickasaw plums of northwest America, but they may be of better quality. Mr. Gibb mentions a dwarf variety of the *Prunus Spinosa* which is very ornamental when laden with its small blue fruit, and advises its introduction as an attractive plant for our lawns.

THE APRICOT. There is a variety of this fruit growing in eastern Turkestan in great quantity, which though small in size, is sweet and of fair quality. Also in the Province of Mantchuria there is yet another variety really good, which is brought in considerable quantity to the Pekin market. Mr. Gibb thinks we should give these a trial.

THE ROSE. Mr. Gibb learned that the Japanese *Rosa Rugosa* was perfectly hardy at St. Petersburg and Moscow, hence we may be sure that it will thrive in our climate. Both the single and double forms are beautiful.

NATIONAL SCHOOL OF FORESTRY.

It is intended by the promoters of the exhibition, which it is proposed to hold in Edinburgh, Scotland, next summer, to make it the starting point of a National School of Forestry, an institution much needed in Great Britain. At present students have to go to schools on the continent for instruction, while there is ample scope for study at home.

BEN DAVIS AND STONEWALL JACKSON APPLES.

An esteemed subscriber residing in Nova Scotia asks for information concerning the above named apples. It is not known where the Ben Davis originated, but the tree has proved itself to be very hardy, a free grower, coming into bearing early and yielding abundant crops. It seems in some measure to take the place of the Baldwin where that tree will not flourish. Its habit of blooming late makes it specially valuable in places liable to late spring frosts, because even these have generally passed before the blossoms have opened. The fruit is of a good even size, free from blemish, and bears transportation well. It is roundish, and conical in form; in color yellow, overspread and striped with red. The flesh is white, tender, juicy and pleasantly subacid, but by no means high flavored. In use from January to May. In the Report of the Fruit Growers' Association for 1882, page 82, it is said to be gaining in popularity, finding its way very generally through the Province, and looked upon as very hardy and a fine shipper to the British markets. In the Report for 1880, at page 24, Mr. P. C. Dempsey, of Trenton, says of the Ben Davis, that the tree is hardy, and commences to bear at three or four years from the graft; that the fruit is large, and will save until July with ordinary care, and command a better price than the Golden Russet.

The Stonewall Jackson was found growing in a stone wall on the farm of Silas Jackson, in Clarence, Annapolis County, Nova Scotia. The tree is said to be a strong, upright grower when young, and a good bearer. The fruit is described as medium in size, roundish and slightly conical; in color yellow, shaded with light and dark red; the flesh whitish yellow, tender, juicy, subacid, and of very good quality. In use

in January to March. So far as we know its reputation is purely local. We have never seen the fruit, and do not know of a bearing tree in Ontario. There is another Stonewall Jackson grown in Southern Alabama that is quite distinct from the one of Nova Scotia, to which latter fruit we presume our correspondent refers.

THE PROFITS FROM GROWING SMALL FRUITS.

In treating of this subject the *Prairie Farmer* remarks that if our farmers were asked from which the most bushels could be raised, an acre planted to corn or one planted to strawberries, they would probably reply without hesitation, from the acre planted to corn. And if told that an acre planted to strawberries would yield three times as many bushels as could be raised from an acre devoted to corn they would probably be inclined to doubt the statement. Now how many of our farmers grow an average of sixty bushels of corn to the acre? However, the writer has grown as many as eighty, and ninety, and occasionally a hundred bushels to the acre. Suppose we accept these figures as the maximum quantity that one can raise with careful cultivation and favorable weather, and that the average price of the corn in our market is fifty cents a bushel, we shall then have fifty dollars as the gross value of the crop of corn. Now if our readers will turn to page 171 of this sixth volume of the *Canadian Horticulturist* they will see that Mr. Smith, of Wisconsin, stated after more than twenty years' experience in the growing of strawberries, in that climate so similar to our own, that he does not consider two hundred bushels per acre an extra crop, that he has repeatedly raised much more, sometimes even double that quantity. Mr. Parker Earle states, see page 172, that one

hundred and fifty bushels to the acre ought to be secured with considerable certainty. Now the price of strawberries will average six cents per quart, or one dollar and ninety-two cents per bushel, which will make, at one hundred and fifty bushels per acre, a gross yield of two hundred and eighty-eight dollars. It requires three years to produce two crops of strawberries, so that one will get from corn in three years one hundred and fifty dollars, and from strawberries five hundred and seventy-six dollars. Which is the more remunerative crop?

THE FRUIT GROWERS' ASSOCIATION OF ABBOTTSFORD, PROVINCE OF QUEBEC.

The Annual Exhibition of this Association was held on the 27th of September last, at which two hundred and seventy plates of apples and thirty-eight of crabs were exhibited. The growing of pears is a new industry in that section, and only eight plates, comprising three varieties, were shewn. The Flemish Beauty is said to take the lead in point of hardiness, the Clapp's Favorite being next to it in that respect. There were twenty-nine plates of plums. The Lombard is reported as having fruited heavily this year. Seedlings raised from the wild plum of Wisconsin have borne fruit for five years, always full and sometimes loaded. Also the Chickasaw and the flat plum of China are growing there, and so far seem to be hardy. Mr. W. M. Pattison, of Clarenceville, Quebec, exhibited sixty varieties of grapes grown in the open air. Some new varieties of Russian Melons were shewn, we presume by Mr. Chas. Gibb, and pronounced very fine.

A new feature of the exhibition was a collection of the foliage of some 100 varieties of ornamental and timber trees, not natives of this province;

among which were 11 varieties of maple, 11 of ash, 8 of poplar (including three varieties from Siberia, and one from Turkestan), 10 of willow, 5 of European basswood.

There were also Walnut and Philodendrons from both North China and Japan; the Ailanthus, Ginkgo, and Honey Locust from China; the Cercidiphyllum, which grows to an immense size on the mountains of North Japan; Conifers from the Rocky Mountains, Central Europe, Chinese Tartary and Japan; shewing that Abbotsford is taking the lead in increasing the flora of the province and developing the production of both useful and ornamental trees and shrubs.

The matter of ornamental street planting has received some attention amongst the members of the association, and it is believed that Abbotsford is the only place in the province of Quebec where Norway maple, Weir's Maple, Catalpa and the beautiful European cut-leaved weeping birch have been planted as road-side trees.

The forestry movement here was entered upon in no sense as a commercial enterprise, but purely for experimental and educational purposes, but gradually nurserymen are beginning to move in the matter to supply a demand that is sure to spring up for ornamental and timber trees.

REMEDY FOR THE YELLOWS IN THE PEACH.

Dr. Penhallow, of Houghton Farm, advises as the next best thing to a specific fertilizer for the peach, composed of costly ingredients, the utilization of all the wood ashes one can save or buy, with the addition of common salt as a means of obtaining the chlorine he would get in muriate of potash.

NOTE.—Our readers can gather wood ashes where wood is used for fuel and

buy refuse salt by the car load at the Salt Works. We hope some of them will give this a thorough trial and report their experience through the columns of the *Canadian Horticulturist*. Mr. Robert N. Ball, of Niagara, thinks he has found the application of lime to his peach trees to be very beneficial in arresting what seemed to be the first stages of the yellows.

HARDY FRUITS FOR MANITOBA AND MUSKOKA.

The following taken from the Winnipeg *Daily Sun* is of especial interest to those of our readers who live in the colder sections of the Province :

"While reading an interesting and valuable letter from the pen of the indomitable investigator into apple culture, Mr. Charles Gibb, of Abbotsford, P. Q., addressed to our department of agriculture, we are again reminded of the wonderful enthusiasm which characterizes the efforts of fruit-growers. With many it seems to be an infatuation, and a most fortunate one it is, in view of the inestimable benefits thereby conferred upon the world. When the impartial Judge shall write down a list of earth's heroes we expect to find near the top the names of many such quiet, earnest workers as Mr. Wilder, of the U. S., Mr. Beadle, Mr. Saunders and Mr. Gibb, of our own Dominion, whose life's labors have been devoted to the invention and development of blessings, among the richest mankind can employ. We do not propose in this connection to speak of the value of fruit as a luxury, its health-giving properties, or its influence upon the morals of the community, although we are naturally led in that direction. We simply intend to refer to the contents of Mr. Gibb's letter, draw attention to its importance and acknowledge the kind interest he manifests for our good.

Mr. Gibb has spent very much time of late years in travelling and investigating the character and value of the fruit of different countries and climates. His experience is especially valuable to North-west people because much of it has been gained in Russia, in the same latitude as our own country, where large quantities of fruit are grown, not only for home consumption, but for export. The opinion has been commonly and popularly expressed, that whatever might be expected of this country, the cultivation of other than strawberries, raspberries, currants and other small fruits in the fruit line, was out of the question. Mr Gibb, whose opinion can fairly be set against an army of novices and casual observers, is not so impressed. He says: 'I look forward in hope to the time when Manitoba shall have, in specially favorable and sheltered places, her commercial orchards supplying her markets with home-grown fruit, and also less favorable soils and situations growing fruit in an amateur way with more or less success.' And, in this reference, he speaks particularly of apples.

"After leaving here a couple of months ago, Mr. Gibb spent some time in Minnesota inquiring into the history of all efforts there made in fruit culture. It is the result of this research that he makes the excuse for the letter we refer to, and very full of value, it appears to be for North-westerners. He says: 'The question of hardiness is of primary importance to Manitoba, for we are not now in search of fruits for the future sheltered city gardens of Brandon and Portage la Prairie, but for open prairie exposure, trees expected to live and thrive without shelter belts.'

"The opinions given by Northern Minnesota fruit-growers, whose experience is the truest guide to experimental work in Manitoba, would lead to trials of the following varieties of apples :

Florence, Martha, Duchess, Wealthy, Tetofsky, Transcendent, Hyslop and different members of the Russian Anis family. Of the yellow Anis grown in Minnesota, he says: 'It is a medium-sized apple of pretty good quality, somewhat red in color, and though hard and crude when I saw it, does not keep later than the beginning of October. Red Anis No. 985 is much like it, possibly a little more red, and much like Skeischapel No. 413 of Mr. Underwood; scarcely the true Anis Rosovo of the Volga, but a near relative.' Mr. Peffer, of Pewaukee, Wis., suggested to him for trial in the rich soil of Manitoba, the slow growers like Tetofsky, Gibb, Duchess and Cherry crab, and also Transcendent. These he suggested from what he knew of them farther north. Gibb crab, he says, is doing well so far as Crookston."

There is one thing to be remembered concerning the Hyslop and Transcendent crabs, and all of that race, that they are much more subject to the disease known as "blight" than the Duchess, Wealthy, Martha and other apples of the same type. It is very discouraging to have a fine orchard of crab apple trees, just coming into bearing, ruined by that mysterious but fatal blight. In addition to the varieties named above we would suggest that trial be made of Wolf River, a very large, bright, red apple, ripe early in winter; Waupaca, large, yellow, overspread with red, ripe in November; and Weyauwega, which is yellow, splashed with deep red and a good keeper. These all originated in Northern Wisconsin and are reported to be very hardy. Scott's Winter is also a very hardy apple and keeps well into July, which should thrive well in Muskoka; and will probably do well in Manitoba if planted on ground having a gravelly sub-soil. It is very doubtful whether any apple tree will

thrive planted over the cold tenacious clay sub-soil that prevails at Winnipeg. However, experiment will decide this question, nothing else can satisfactorily.

THE CURL IN THE PEACH LEAF.

Professor Penhallow writes to the *Country Gentleman* that the curl in the peach leaf is caused by the growth of a fungus known as *Exoascus deformans* Freckel (*Ascomyces deformans* Berk, *Taphrina deformans* Tul.) During its growth it not only causes the leaves to curl, but to lose their green color and become more or less red and yellow, and we see from this, therefore, that such leaves are incapable of performing their normal functions in the assimilative processes of the plant. The necessary result of this is, that there is a very limited formation of wood while such leaves remain on the tree. For this period, therefore, it must be admitted that the curl does exert a positively injurious influence. It is found, however, that these leaves fall off during the month of June, and a new set of leaves free from curl appears. Upon these, then, the entire growth of the season depends, and because, unless otherwise diseased, the tree then very frequently makes a fine growth, fruit-growers generally believe that the curl is of no importance, and that it does not injure the tree at all.

Such views are manifestly erroneous, and it would be much better for the peach industry if our fruit men would apply remedial measures as soon as the curl is manifested. According to my own observations, each year more fully confirms me in the belief that the presence of curl is indicative of low vitality in the peach tree, and that the yellows will be quite apt to follow shortly. I trust these lines may have the effect to stay the progress of erroneous ideas which seem to be gaining altogether too rapidly.

THE ANALYSIS OF SOILS.

Dr. Sturtevant, who is the Director of the New York Agricultural Experiment Station, thus replies to inquiries as to whether the station undertakes the analysis of soils, setting forth the reason why the station does not undertake soil analysis.

A cubic foot of soil in the average condition of moisture weighs from 70 to 100 pounds. The soil taken ten inches deep from an acre of land would therefore weigh about 3,000,000 pounds.

For the purpose of analysis, in the ordinary method, about 1-10 of an ounce of this soil would be taken, and this represents about 1-480,000,000 part of an acre.

If one ton of superphosphate, containing ten per cent. of phosphoric acid, were thoroughly mixed with the upper ten inches of an acre of soil we should have added 200 pounds of phosphoric acid to 3,000,000 pounds of soil, or one part to 15,000; that is to say, that each 15,000 pounds of soil would contain one pound of the added phosphoric acid. As but 1-10 of an ounce of this would be used for analysis, this 1-10 of an ounce would contain but 1-15,000 added parts of phosphoric acid, and this proportion would be represented by the percentage figures 00.0066, or .0000066 of an ounce.

This will be better understood if we repeat that in percentage figures it would require the addition of over 300 pounds of the superphosphate to the acre to change the third decimal figure of the analysis by a unit. The corollary of this is that as the chemist rarely works in this class of analyses beyond the second decimal figure, the addition of an ordinary fertilization, or that sufficient to make the difference between a good and bad crop, would not be detected.

We can moreover state the practical improbability of taking two samples of

soil from different places in the same field which would analyze alike within even the second decimal figure.

In the beginning of the application of science to agriculture, the public attention was strongly attracted by the theory that a chemical analysis of soil was about to offer a sure means for determining definitely the condition and the needs of our soils, and various charlatans disseminated the idea of this possibility for purposes of their own, in order to secure the privilege of prescribing and furnishing the diet required for each field of the farm.

At the present time it is universally recognized by men of scientific training that the analysis of the soil for the purposes of the individual farmer can offer no solution to the problem of what fertilizer or how much to apply.

PROFESSOR TANNER'S REPORT.

This report just submitted to the Council of the Institute of Agriculture, England, states that the Professor traveled fully 5000 miles within Canadian Territory and that throughout the whole of his tour he found those settled upon the lands, prosperous, healthy and happy. He goes on to say, "after conversing freely with large numbers of these settlers, I am able to state that I did not meet with a single instance in which they were not fairly successful, contented, and full of hope for the future. They worked hard, it is true, but that labour was sweetened by the knowledge that they were improving their own property. Their personal requirements were easily provided for by the aid of a rich and productive soil, their families were growing up around them in the enjoyment of health, and without any anxiety being felt as to their future success in life. In speaking of Canada as I have done, I must not be supposed to repre-

sent it as an Earthly Paradise from which disappointment, loss, and suffering are excluded. Failures have arisen, and will arise, for men bring upon themselves here, as elsewhere, the results of their own imprudence and lack of perseverance, but these constitute an excessively small proportion of the cases existing in Canada, and they are quite exceptional in their character."

NATIONAL ASSOCIATION FOR SANITARY AND RURAL IMPROVEMENT.

This Society has for its object the establishment of local societies for the purpose of effecting both sanitary and rural improvements, and the issuing of publications on these subjects as well as the holding of annual conventions for discussion and conference.

The Secretary is very desirous of obtaining the address of any such societies existing in Canada, or of any persons who are interested in forming such organizations. If any of our readers can give the desired information they will please address Mr. Chas. M. Wingate, Secretary, 119 Pearl Street, New York.

AGRICULTURAL EDUCATION.

The Council of the Agricultural and Arts Association of Ontario have issued a circular, setting forth that they have decided to inaugurate a scheme of annual examinations in subjects bearing directly upon the work of the farm, somewhat similar to those in vogue in England and Scotland, accompanied with the granting of certificates of merit. Only second and third class certificates will be issued at the first examination, for which the required courses of reading are indicated in the circular. Money prizes will also be given to the three candidates for second class certificates obtaining the greatest

number of marks of \$25, \$20, and \$15 respectively; the same to those who have never attended any agricultural school in Canada or elsewhere; and to the four candidates for third class certificates who have not attended any agricultural school, \$30, \$25, \$20, and \$15 respectively. The examinations will be held in connection with the High School intermediate examinations of next July, and candidates are required to send in their names and desired place of examination, stating whether they have attended any agricultural school, to Mr. Henry Wade, Secretary, Agricultural Hall, Toronto, before April 1st, 1884, of whom copies of the circular containing full information can be had on application.

PLUMS, RASPBERRIES, GRAPES.

TO THE EDITOR OF THE CANADIAN HORTICULTURIST.

MR. EDITOR,—I have seven trees of the Fellenburg plum, from two to five years old. To the present none of them have shown any of the black knot, while some 40 other plum trees of several varieties have all been badly affected by it, more or less, for the last five years. If such is the case with others who have the same kind, I have no doubt but that quite a number of our members would like to know it.

Fruited two bushes of Shaffer's Colossal raspberry; have taken off berries one inch in diameter; average size $\frac{3}{4}$ and $\frac{7}{8}$ of an inch. It is also a heavy bearer.

I have pruned about 50 grape vines of several kinds, some of which show most of this year's growth of wood to be dead; others not quite so bad, but all more or less so. What is the cause?

Did not ripen any grapes this year, even the Champion did not get a chance to ripen through our early frosts.

Have a tree of the American chesnut, planted about eight years ago. Our

severest winters since it was planted have not affected it any. Have not had any fruit from it yet. Quince trees frozen down two years ago. Peach trees killed out. E. D.

BLANCHING CELERY.

Mr. W. C. Milton writes on this subject to the *Michigan Farmer* as follows;—First I sow in a cold frame early in spring; when the plants are about two inches high I transplant in rows; plants 12 or 14 inches apart in the rows, the rows about five feet apart. When the plants are about ten or twelve inches high, I then commence to handle by gathering up the stalks and leaves and drawing about three inches of earth around each plant. When they are 16 inches or so high I take a common three-inch drain tile and slip over the plant. This is done by one person gathering up all the leaves, and another person with a strip of cotton cloth, three inches wide and about five feet long, commencing winding around the stalk at the base and winding up to the top. Then slip your tile over, and as the tile descends unwind the cloth, and so on through your row, or as much as you wish. You can take up one plant and not molest any of the rest. Care should be taken that the leaves come out over the top of the tile, or it will smother. This is as near the way that I managed with mine as I can tell you on paper."

Mr. Milton says his plants are always nicely blanched the entire length of the tile, and free from canker, dirt or worms. The tile settles into the earth slightly, and protects the plant from insects. He has had good success with this method, and he thinks it less trouble than the usual one pursued by growers. It is an easy thing for growers to test it with a few plants, and if they grow as fine samples as Mr. Milton exhibited, they ought to be pleased with this new idea.

THE GARDENS OF VANCOUVER ISLAND.

I do not know when I have been more agreeably surprised than by a visit to the town of Victoria, which is on the south-east point of Vancouver's Island and between latitude 48° and 49° in the North Pacific Ocean. We have been for some days sailing on the Pacific and along the Straits of San Juan de Fuca, the heavily snow-capped mountains of the Olympic making the air so chilly that those who kept in the open air at all had to do so with overcoats, or, if ladies, in warm wraps or furs. All at once we came to the mouth of Puget Sound, opposite to which is Victoria, and all was at once pleasant. Summer weather and everything as lovely and beautiful as the prettiest poet might imagine. The harbor of Victoria is, however, small and shallow, and, as a consequence, our heavy vessel had to lie for six or eight hours a mile and a half outside, waiting for the tide to rise, and this gave me the opportunity to do some interesting botanizing among the rocks along the coast.

The town of Victoria, which we reached in the afternoon, is an indescribably pretty place. It is built on a high rocky bluff, and has a park called Beacon Hill, from its use in signaling in those olden times when Indians were troublesome. Though the mountain tops, some fifty miles away, are perpetually white with snow, except when the morning and evening sun lights them up in purple and gold, the air in the town is warm (though without sultriness), owing to the long day's sun—sixteen hours now, July—warming the sheltered spots where the high mountain ridges keep off the arctic winds.

The people are fond of flowers, and almost every cottage was embowered in vines, and seemed ready to break down with their load of blossoms. In my early life in England, I have memories

of whole buildings completely covered from roof to the ground with sweet Roses and gratefully scented Honeysuckles, but I have often found that early memories become magnified. The distance of time lends an enchantment to the early view. I had come to suspect that the Roses may not have been quite so strong, nor the Honeysuckles quite so sweet, as these early memories record them. But here they were, even excelling these impressions and giving a new echo to the voices of youth. The tale was true. The wild English Honeysuckles, running by the cottage door, rambling under the eaves to almost gable end, dropping in festoons between the windows, and only by the aid of art permitting a glimpse of the within, and giving out thousands—yes, thousands of bunches of their deliciously scented purple, and white, and yellow flowers. And the Roses, and the Pyracantha, and the Evergreen Ivy, and the scores of other things which, even in Philadelphia cannot be grown without much trouble, here they may be seen climbing in wonderful luxuriance, or making bushes in some cases, nearly as large as the habitations they adorned.

Roses? yes! How they would have charmed the heart of an Ellwanger or a Parsons! How the enormous "Jacks," by the thousands, would have made the purses tremble of those florists who with us only get them to perfection by the lavish expenditure of cash and by the sweat of their brows! Even the standard or tree Roses are grown to an enormous extent, and make the same beautiful ornaments in yards that they make in the Old World. And the indigenous Rose—*Rosa Cinnamomea* or Cinnamon Rose—grows in a state which I may almost call grandeur. I have it growing in my Germantown garden, but about three feet is all the height it cares to grow for me. Here you may see bushes—nay, masses—scores of feet in

diameter, ten feet or more high, and bearing thousands of their remarkably sweet, rosy flowers, giving a fragrance to the air for a long distance away. In many instances the Sweet Brier and Eglantine of the Old World had become naturalized, and got into the fraternal embraces of their native brother; but those were also growing with equal luxuriance, showing that it is the climate which does it all.

When the time shall come that the whole country shall be brought under improved speed in traveling connections, and the United States shall be but a few days' reach from this now distant land, this ought to be the great Rose center of the American continent. Not only the Rose, but numberless plants of the Old World have escaped from cultivation, and are making their way through the world on their own account most gloriously. The English Daisy, the "gowan fine" which Burns tells us of in "Auld Lang Syne," is getting out everywhere among the grass, and the Furze and the Broom and many others abound in the woods and along the road-sides.

In Mr. Johnston's beautiful nurseries I saw the Deodar, and many other evergreens half-hardy with us, growing magnificently, and I have never in any part of the world—not even in its native home at Calaveras, Mariposa, and other places—seen the great Mammoth Sequoia so evidently satisfied with this world as in Mr. Johnston's grounds. These nursery grounds are not very large, but have more variety than I have seen in any nursery since I left home. Apples, Pears, Plums, and particularly Cherries, make a remarkably vigorous and healthy growth, and just now the Cherries are breaking down with their weight of fruit. But here, as elsewhere good culture has to tell its own story. Apples orchards are set out, then they are left to struggle for food with the grass or other vegetation, and soon get

yellow, hide-bound and moss-clotted; and then the owners tell me "the Apple is one of the fruits which will not do in Victoria"; but when you come to places where the Apple has all the ground to itself, or having other things growing with it, is still manured for both, then you will see that the Apple will do as well as elsewhere.

And what a country for the cooler-loving fruits and vegetables! The common Currant grows five feet high, and bears fruit as large as the Cherry or Versailles. And such Cabbage, Lettuce, Peas, etc., few if any of our readers ever saw.

I almost felt that I could remain here; but when I remembered the grapes and watermelons and tomatoes, and scores of other things which we have and they may envy, I shall feel free to return as happy as when I left home.
—THOMAS MEEHAN, in *Gardener's Monthly*.

NEW PLANTS.

BEGONIA, PRINCE ALBERT VICTOR.—A first class certificate was awarded to this new Begonia which is described in *The Garden* as an extremely fine double-flowered variety of the tuberous rooted Begonias, having large flowers whose petals form a perfect rosette of bright cherry crimson; while the plant is a sturdy grower and well furnished with blossoms.

ROSE, HER MAJESTY.—The floral event of the National Society's Rose Show, was the winning by Mr. H. Bennett, of Shepperton, the Society's gold medal for the best Rose in the show with his new Rose called Her Majesty. It is instructive to find that a homely English farmer, now retired from the occupation of corn growing, should have beaten both home and continental raisers by producing, not only for the year the finest new rose, but

also one which will probably prove the best of a decade of years. We are thankful Her Majesty does not wear those heavy habiliments of colour which have marked so many of our new roses of recent introduction; on the contrary, it is of a lovely soft flesh tint. Just as A. K. Williams has proved to be the richest coloured and most beautiful rose of its class so far, so will Her Majesty occupy that distinguished position amongst fair roses—in fact, amongst regal flowers the queen. On stands of many blooms there has been such a ringing the changes upon the Baroness de Rothschild and La France, both very beautiful of their kind, that another new rose belonging to their section is indeed a treasure. Her Majesty, as becomes such a royal flower, is large in size and beautiful in form; and it was noticeable, in spite of the expansion caused by the heat, that she maintained her good looks to the last.
—*The Garden*.

CHRYSANTHEMUM ALEXANDER DUFOUR.—A new early flowering variety distinct from all the rest of the race, inasmuch as it is a cross between the Japanese section and one of the varieties with short florets. The flowers are larger than any other of the early race, the florets being narrow, prettily reflexed, and of a bright amaranth, a colour peculiarly pleasing and cheerful, particularly under artificial light. As to its extreme floriferousness, the plants shewn by Messrs. Cannell, of Swanley, bore evident proof.

EUCHARIS SANDERL.—A new bulbous plant from Columbia, and quite distinct from either of the other two cultivated species. It has large deeply furrowed foliage of a pale green colour. The flower-spikes overtop the foliage, and bear umbels of pure white flowers nearly as large as those of *E. grandiflora* (amazonica), but with the corona

suppressed. It will doubtless prove to be a valuable garden plant, and as popular as the other two species.

NEPENTHES NORTHIANA.—A new Pitcher Plant from Borneo. It is one of the largest species known, producing pitchers nearly a foot in length, and of proportionate breadth. In form they are distinct from those of other species, inasmuch as the rim is broad and deeply furrowed. The ground colour, which is pale green, is marked by large, irregular blotches of crimson-red. The plant shown by the introducers, Messrs. Veitch, bore but half-sized pitchers, but those were quite characteristic of the species.—*The Garden*.

MAGNOLIA PARVIFLORA.—Mr. S. B. Parsons, writes to *The Garden* concerning this new variety of the *Magnolia* as follows :—I wish you could see now our specimen of *Magnolia parviflora*, a new species which we received some years ago from Japan. The tree is about 8 feet high, and the leaves, which are fully formed before the flowers appear, are 6 inches long and $3\frac{1}{2}$ inches broad ; on it are 128 buds in all stages of expansion. Some are the size of an egg, while others are fully expanded, making a flower five inches in diameter. The most charming form is that of a cup, the heart-shaped petals, two inches in diameter, forming a perfect curve over the stamens and pistil. The petals are of a pure and creamy white without a trace of colour. The sepals have a slight pink colour. The mass of stamens is two inches in diameter, and they lie horizontally and compact, half of each being well-defined deep vermilion, and the other half a scarlet-tipped orange. The pistil rising from these stamens is $1\frac{1}{4}$ inches long and three-eighths of an inch thick, with light green and scarlet tints. This *Magnolia* has the combined fragrance of banana, pine-apple, and winter

green, and one flower will perfume a room. With its beauty of form and colour, and its exceptionally delightful fragrance, I think I am not extravagant in pronouncing it the most charming hardy flowering tree that I know. He further adds, I would like you to see also our Japan Maples, for which we think this region is the home. For the convenience of ploughing between them, we cultivate them in rows two hundred feet long and three feet apart, and the luxuriant mass of colour as you look upon them from the end is something to be remembered. I have massed a number of kinds upon a lawn with grand effect, but I am very fond of two kinds planted in a group—the japonicum aureum and the polymorphum sanguineum. The rich gold of one makes a charming contrast with the blood red of the other through which the sun shines as through a glass of claret. The atropurpureum is very nearly equal to the sanguineum. On a bright summer afternoon I stood under one of the latter nearly 10 feet high, and, looking up through the leaves, made transparent by the red light, the effect was very charming. The cold of the past winter had no effect upon these Maples, while *Retinosporas* were badly hurt, and even the Norway Spruce and in some instances our native Hemlock were entirely killed.

RED ASTRACHAN APPLES.

Col. B. L. Wiley, one of the most extensive apple growers and shippers, as well as the pioneer in that line, at Makanda, shipped 900 third-bushel boxes of Red Astrachan apples from only fourteen trees. As prices were high for apples he netted about 62 cents a box, or about an average of \$40 per tree. Besides, there were about 200 boxes in amount that dropped off, the value of which for cider or vinegar may be added to the above. Has anybody

fourteen trees which have paid better this year? The Astrachan is a tardy and shy bearer when young, but atones for these faults by yielding heavily when older.

We are told also, that D. Gow, of Cobden, sent a trial lot of 100 $\frac{1}{2}$ -bushel boxes of Red Astrachans to Cleveland, which netted him over \$100. These fortunate shipments of Astrachans this summer will induce additional planting of this variety. A young orchard of 500 Astrachan trees in this vicinity bore its first crop this year.—*Farmer and Fruit Grower*.

GATHERING PEARS.

Perhaps there is no fruit on which the quality so much depends on the right time of harvesting as pears, for if gathered too soon they shrivel, and, if eatable at all, they are more or less insipid, whilst if left on the trees till they are eatable, particularly the early varieties, they are mealy and flavourless—at least such has been my experience, and even now, after years of practice, we sometimes fail to hit on the right time to gather some of the kinds; hence the suggestions I have to offer as to when to gather must not be taken as infallible, but simply as the best I have yet learned. To begin with the earliest and second early varieties, the former under any circumstances are always more or less mealy; obviously therefore the time of gathering cannot make them firm and buttery in flesh, but they are always best if gathered about a fortnight before being fit for table, and the best criterion as to when they have attained that degree of maturity is to gently lift up the fruits, and if they part readily from the tree, then they should be gathered and be placed in a cool, airy room. The same rule is equally applicable to the second early varieties with this addition, that if a portion of the fruits of the same tree

be gathered at intervals of a few days or a week, the season when they are fit for use will be greatly extended; this is particularly the case with respect to Williams' Bon Chrétien, Beurré d'Amans, Brown Beurré, Seckle, and Marie Louise. I have also noted it to be the case with some few of the latter varieties, Winter Nelis, for instance; we gathered a few of this kind a week ago, others will be gathered this week, and others will be left on the trees as long as it is safe to leave them, and so, as in former years, we shall hope to have ripe fruit of this kind from November to February. Other late kinds, that by following the same rule, may have their season of use lengthened are Josephine de Malines, Beurré Bosc, Delices de Hardenpont, Passe Colmar, and Beurré Diel. With respect to gathering very late kinds, the best rule to follow is to disregard every symptom of maturity, such as black pips, pecking by birds, and even ready parting from the tree when moved by the hand, and only gather them as soon as they begin to drop from the tree naturally; there will then be few if any shrivelled fruit, and at the season of ripening the quality may be expected to be all that can be wished. I need scarcely add that all kinds should be handled with the greatest care, and if space can be afforded for laying them singly on the fruit shelves, not only will they be more readily inspected to remove decayed fruit, but the percentage of such will be more reduced than if they were laid in double file.—*The Garden*.

MELON AND SQUASH BUGS.

I want to say *most emphatically*, that I hereby give *the* remedy for the melon and squash bug. Had a fine lot of melon and squash this season, up and looking well. All at once the bugs came down on them as though they meant business. I took a tight barrel,

threw in one and a half pailfulls of fresh cow drops, filled up the barrel with water from creek, stirred thoroughly, filled a pail, took a handfull of weeds having thick stems and long leaves, dipped in the liquid and dribbled the vines, letting it run freely down the stem so as to thicken around the stem, thus preventing their harboring at that point. The second day I went over them again. The bugs all left for parts unknown—may be in disgust at the smell and looks of the plants. Am entirely satisfied it's a good fertilizer, so another season I shall not wait for the bugs to come, but dose the plants soon after they come in sight.—G. R. RICHARDSON, in *Fruit Recorder*.

DESIRABLE SHRUBS.

Chionanthus virginica (white Fringe Tree of the United States).—So called from the narrow strap-shaped petals giving to a raceme of its flowers the appearance of a bunch of white fringe. It is so different when in blossom from all other shrubs, and withal so pretty, that one wonders it is so rarely seen. In general aspect it may be likened to a Lilac. It is said to grow naturally in boggy places; in England, however, it does well in ordinary soil, but not where very hot and dry.

The Carolina Allspice (*Calycanthus floridus*) would be by many considered dull and uninteresting were it not for the delicious fragrance of its purplish blossoms, which, though not very attractive to the eye unless closely looked into, are not only quaint, but pretty. In a moderately moist spot and where slightly shaded from the full rays of the sun this Allspice will flower for nearly three months in summer.

PYRUS MAULEI.—Of Maule's *Pyrus*, it may safely be said that its season of flowering is spread over a longer period than that of any other, except it be *P. japonica*. A specimen of it was in

flower early in the spring, and on June 15th there were several perfect flowers on it, which have, however, since dropped. This is so beautiful and floriferous a shrub, that it certainly ought to be in every collection, however small.—*The Garden*.

AN INTERESTING NATIVE PLANT.

THE ZAUSCHNERIA.

This somewhat harsh name has been bestowed upon a handsome little fuchsia-like plant of the far West, which is well worthy of a trial in our gardens. The genus includes but the single species, *Z. Californica*, which is found throughout southern and central California, and eastward to New Mexico and Utah. The plant is herbaceous, or slightly woody at the base, with a strong, hard, perennial root. The stems—about a foot long—are decumbent and descending, and grow so thickly as to quite cover the ground. The stems and branches are terminated by loose racemes of scarlet flowers. The latter are about an inch long, the parts in fours,—tetramerous, as the botanists say,—with the calyx and corolla colored alike. The style and stamens, as in the *Fuchsia*, are exserted to some distance beyond the petals, and the anthers are loosely attached by the middle, presenting that pendulous appearance which is so prettily seen in the anthers of the *Lily*, and which gives to the latter flower its chief grace. The leaves are about an inch long, lance-shaped, slightly toothed, of a deep green, and more or less hairy. Altogether the habit of the plant, the disposition of the flowers, the highly colored calyx, and the exsert style and stamens, render it strikingly like a *Fuchsia*, while it has a charm possessed by no variety of the latter—a brilliant scarlet color.

In its native mountains its specific attractions are heightened by the sur-

roundings. Where the cañon broadens out into a little garden-like expansion, it loves to take possession of the gravelly bottoms on either side of the stream, where it grows to the exclusion of almost everything else. The surrounding cliffs, covered with vines and ferns, form a rich setting for the garden beneath.

In the flower garden it would doubtless admit of great improvement, as even at home its appearance varies greatly with soil and altitude. As it is accustomed in the Sierra Madre to severe cold and very sudden and frequent changes, it would probably prove nearly, if not quite, hardy in this latitude. It should be grown in a light, rich, well-drained soil, with an abundance of water, especially about the time of flowering. During winter it should be well covered with mulch, or be placed in a frame.—H. H. RUSHBY, in *The Garden*.

BURNING COAL-TAR TO KEEP OFF THE FROST.

Only two seasons in twenty years have grapes frozen in my vineyard previous to the 20th of October. The nights of the 4th and 5th just passed were one of the exceptions. With the thermometer at 24° in the morning, strong measures are needful for protection. My vines, bearing four tons of grapes to the acre, were uninjured the first night by the protection given from fires kept burning throughout the night. Having part of a barrel of coal-tar on hand, I found it of more service and less expensive than wood. Hereafter I shall be provided with a few barrels of it when frosts are expected, also some brush or combustible material at the edge of the field to be protected. The application of coal-tar is easy and produces the slow combustion needful. Coal-tar is so much more effectual and cheaper than wood, while more conveni-

ent for use during the night, that it often may be available when other fuel could not or would not be procured. What grapes were on the vines on the night of the 5th and unprotected by fires were completely frozen to the centre, although the thermometer registered the same degree of cold as the previous night.—J. H. DICKERMAN, *New Haven County, Ct., in N. E. Homestead*.

DRYING TOMATOES.

In Italy an extensive business is carried on in drying tomatoes to use during those portions of the year when the ripe fruit cannot be obtained. Tomatoes are raised, for the most part, between rows of grape vines, so that the land of their culture costs nothing. Sometimes the tomato vines are trained on the lower bars of a trellis, to which the grapes are attached. The tomatoes are allowed to remain on the branches until they are quite ripe, when they are picked and pressed in bags made of coarse cloth, which allows the pulp to pass through, but which retains the seeds and skins. The pulp is then thinly spread out on cloth, boards, or in shallow dishes, and exposed to the sun to dry. When it has become quite dry it is broken up fine, or ground, and put into boxes or bags and sent to market. A large part of it is used for making soups, but considerable of it is employed as we do tomatoes that are preserved in tin or glass cans. It is soaked for a few hours in warm water, and then cooked in the ordinary manner. Large quantities are wanted for home consumption, and considerable is exported. This would seem to be a profitable industry to engage in in this country. The pulp of tomatoes could be dried to good advantage in any of the styles of apparatus employed for drying apples, peaches, and small fruits.—*Rural Record*.

PLUMS FOR VERY HIGH LATITUDES.

Professor Budd of the Agricultural College of the State of Iowa, has given a great deal of attention to the study of those fruits which will succeed in very cold climates, and as the result of his studies advises that we turn our attention to plums of native origin. He thus describes a few of those which have come under his observation. We copy from the Iowa State Register his description as follows :

WOLF PLUM.—The fruit of this variety attracted much attention at the State Fair. It is nearly as large as Lombard, and for eating or cooking, about equal in quality. The firm fruit, and peculiar pubescent branches and leaves show some admixture of the European plums, yet, practically, the tree belongs to our native species, and seems perfectly hardy.

DE SOTO.—This was found near an old Indian camping ground, near the mouth of the De Soto, above Dubuque. The tree is a true iron-clad, and an early and regular bearer. The fruit is about the size of the Damson, and quite free from acidity of skin when cooked.

BASSETT.—This is said to be a seedling of the beach plum (*Prunus Maritima*), probably fertilized by some foreign sort. The fruit is small, with a pit little larger than that of the cherry. It is rather firm for desert use, but not excelled for cooking. The tree was not injured on the college grounds last winter.

FOREST ROSE.—This is of the Chickasaw race, originating, I think, in Missouri. In foliage the tree much resembles the peach. It seems perfectly hardy and bears young and regularly, so far as tried. In fruit it is superior to any and all the Chickasaw varieties we have tested.

ROLLINGSTONE.—This is an apparently native variety of Minnesota, with

blue fruit. It has a thicker skin than any of the above and more acidity when cooked, yet it is worthy of attention in the northern countries as a free bearer in the worst seasons, and the possible parent of a line of larger leaved varieties bearing blue fruit.

SPEER PLUM.—This is a small plum, free from acidity of skin when cooked, and seems an early and abundant bearer. It was brought to notice by Hon. R. P. Speer, of Cedar Falls, who is sending it out for trial. I have given the name as we have it, but I think not correctly.

BOOK NOTICES.

CATALOGUE.—Of Standard-bred trotting stock at Ashland Park Stock Farm, near Lexington, Kentucky; B. J. Treacy.

AMERICAN CHEMICAL REVIEW.—Published in Chicago, Illinois, \$5.00 per year, postpaid, devoted to the interests of the arts of applied chemistry.

SCIENCE.—An Illustrated Weekly, published by Moses King, Cambridge, Massachusetts, for the Science Company, \$5.00 a year. Always full of matter interesting to the thoughtful mind.

CATALOGUE.—Of works on Entomology, September, 1883, contained in the Bureau for purchase and exchange under the direction of Ed. Andre, 21 Boulevard, Bretonnière, à Beaune, Côte-d'Or).

TRICHINÆ AND TREATMENT OF TRICHINOSIS.—By W. C. W. Glazier, M. D.; published by the Illustrated Medical Journal Co., Detroit, Michigan, price 25 cents. Gives the entire life history of *Trichina Spiralis*, with copious illustrations.

THE CANADIAN ENTOMOLOGIST.—Is published monthly by the Entomological Society of Ontario, \$1.00 per year. It is edited by Wm. Saunders, Esq.,

President of the Society, and contains the latest information relative to insects, their life history, and when injurious the best means of counteracting their ravages.

DESCRIPTIVE CATALOGUE—Of ornamental trees, shrubs, vines, etc., grown at the Germantown Nurseries, Philadelphia, Penn., Thomas Meehan, Proprietor. Mr. Meehan is a very accurate and well informed botanist, who knows what he is doing, and cultivates a very large variety of both American and foreign ornamental trees, etc.

THE BIOGRAPHICAL MAGAZINE—For November contains short illustrated sketches of Alphonso XII, King of Spain; Lieutenant Greely of the Greely Polar Expedition; Lord Coleridge, Chief Justice of England; Li Hung Chang, Prime Minister of the Chinese Empire; Jules Ferry, Prime Minister of France; Prince Bismark; Martin Luther; Harriet Beecher Stowe, and other celebrities.

TRANSACTIONS—Of the Maine State Pomological Society, 1882. Doctor Hoskins, in an admirable paper on hardy winter apples, states that he knows of but one Canadian apple that is truly iron clad, the Peach Apple of Montreal; and that the hardiest winter apple, widely known in this country is the Wealthy. The McIntosh Red, he says, will bear all that can be said in its favour, for excellence of quality, beauty and productiveness, and *where it does not spot* will be a great acquisition; it is not iron-clad, yet more hardy than the Fameuse. The Mann apple has winter killed badly with him.

The December number of the **AMERICAN AGRICULTURIST** contains about one hundred engravings, which is twenty-five per cent. more than that in any other illustrated periodical in this or any other country. These illustrations are engraved expressly for the paper by leading artists, covering a wide variety

of rural subjects as well as farm inventions and contrivances. These engravings alone in any single issue of the paper are worth far more to every farmer and housekeeper than the subscription price for five years. Notwithstanding the **AMERICAN AGRICULTURIST** is fully worth four dollars a year, the subscription price will continue at \$1.50 during 1884.

THE GRIFFIN WEEKLY NEWS.—Published at Griffin, Georgia, by Douglas Glessner, price \$1.00 a year. It gives interesting intelligence on the subject of fruit culture in Centre Georgia. The W. W. Woodruff fruit farm started there in 1872, now has on it 5,300 pear trees; 17,000 Grape Vines; 2,500 Apple Trees; 1,500 Plum Trees of the Wild Goose variety; and 10,000 Peach Trees. Some of our Canadian fruit growers have also commenced fruit farming there, notably, Mr. W. Oldfield, of the Province of Quebec, and Messrs. Edwin S. Leavenworth and J. McKelvie, of St. Catharines. If any of our readers wish to keep up with the progress of this new fruit region they could not do better than subscribe for this weekly.

BUSHBERG CATALOGUE.—Illustrated and descriptive, from Bush & Son, and Meissner; Bushberg, Missouri; is not merely a catalogue, but a very full manual of the Grape. Grape culture and Wine making. This manual comprises over sixty pages, treating of soil and climate, of the species indigenous to the United States, of grafting the vine, trellising, pruning, diseases of the grape vine, insects preying upon the vine, gathering the grapes, mashing, pressing, etc. The descriptive catalogue is the most complete we have yet seen, giving the name, synonyms, species and when known, the parents; followed by a full description, with character the variety at present sustains among grape growers.

GOLDEN ROD.

The air is warm and balmy yet,
 The meadows still are green;
 But Autumn's royal seal is set
 Upon the smiling scene.
 For look! along the wayside nod
 The tossing plumes of golden-rod.
 It seems but yesterday we found
 The May flower on the hills;
 And gaily were the gardens crowned
 With June's first daffodills.
 We thought 'twas yet the opening year—
 Ah, golden-rod, what brings you here?

We had so many things to do
 That scarcely are begun—
 Say not that harvesting is through,
 And Summer days all done!
 With winged sandals were they shod,
 And fled when you came, golden-rod.

"I care not for your greeting cold,
 September's child replies;
 "My livery of burnished gold
 Suits best autumnal skies.
 No sighs I waste for vanished Spring,
 I wait upon the Autumn's king.

"For he, the king, has need of me,
 Fringe on his mantle's hem,
 When gold and scarlet leaves shall be
 His blazing diadem.
 Grieve not that days like these are near—
 They are the glory of the year!"

—*Portland Transcript.*

THE BRANDY GAGE.—A new plum, one of the strongest growers, and very hardy; fruit medium size, yellow, ripens early, and equal to the true Green Gage in flavor; a great and constant bearer, which does not affect the growth of the tree.—*New York Witness.*

GIANT ZITTAU ONION.—This is one of the finest onions that has ever been cultivated. It is handsome in shape, clear yellow, and if sown in March and properly treated many of the bulbs will weigh upwards of one pound by the end of September. Hitherto the seed has been rather expensive, but when cheaper it will doubtless be generally grown as a main crop variety.—*The Garden.*

LADIES' CABBAGE.—Boil a firm white head fifteen minutes, changing the water; then, for more from the boiling tea-kettle. When tender drain and set aside until perfectly cold. Chop fine and add two beaten eggs, one tablespoon butter, pepper, salt and three tablespoons of rich milk or cream. Stir well together and bake in a buttered pudding dish until brown. Marion Harland says: "I can safely recommend

this dish, even to those who are not fond of any of the ordinary preparations of cabbage, as being both palatable and digestible."

DECORATIVE TREE PLANTING.—The Commissioners of the Woods and Forests, of England, are trying to plant a large extent of crown lands in the Isle of Man with forests and ornamental trees. The experiment, which is watched with interest not only by those who follow silviculture as an art, but by the many who regard with apprehension the gradual denudation of forest and woodlands, leads *Land* to comment on the growth of a taste for planting; for transforming into artistic plots, grounds which are ill-favored and uninviting; for digging lakes and forming cascades, resulting in magnificent combinations of sylvan charms.—*American Garden.*

BAGGING GRAPES.—A correspondent asks for advice on the propriety of bagging grapes. The advantages are, protection from insects and birds; to some extent exemption from rot when that disease prevails; but more particularly in the appearance which the bunches present by freedom from external injury and with the undisturbed bloom of the berries. Sorts which sell at high prices pay for the expense of bagging; common grapes do not. Where performed for profit, the work must be systematized, the bags made by wholesale methods, and the persons who apply the bags must understand the business of applying them rapidly. As the bags retard somewhat the ripening, the grapes keep longer and may be supplied to purchasers a longer period, and the bags afford some protection from autumn frosts. To prevent rot, the bags should be applied soon after the fruit sets, or before it is half grown; otherwise the operation may be deferred till nearly the time for coloring. Manilla paper is the best material, and the upper fold should be drawn over the bunch and pinned, so as to form a roof to exclude rain. Sometimes bagged grapes have been badly injured by long rains in retaining moisture and causing cracking of berries. Time will determine to what extent the practice will ultimately prevail in vineyard culture.—*Country Gentleman.*

INDEX.

PAGE	PAGE
Abbotsford, F. G. Assa	274
Abronia	265
Abutilons	69
Adolph Strauch	154
Agricultural Education	278
Algoma, Fruit Trees in	5
Alligator Pear	229
Amateur Fruit Growers	33
American Pom. Society	105, 209
Ampelopsis Veitchi	191
Analysis of Soils	277
Andromeda polifolia	14
Andromeda catesbei	14
Andromeda Japonica	14
Anis Apple	271
Annapolis Valley, Fruit in	174
Annals	265
Antonovka Apple	272
Aport Apple	272
Apple, The	271
Apple Aphis	213
Apple, A promising Winter	202
Apple Trade	168
Apple Trees girdled	174
Apple Tree Bark-louse	48
Apples	73, 83, 172, 282, 271, 272
Apples Dried	168
Apples, Early, for Market	187
Apples, Export Trade	44
Apples, how Sold in England	160
Apples, Packing of	216
Apricot Growing	167, 191
Apricot, The	272
Arnold, Chas	100, 130
Arabka Apple	272
Arsenic, for Codlin Moth	188
Ashes	96
Asparagus Culture	168
Aster, The	266
Atlantic Strawberry	204
Autumn Hints	259
Bagging Grapes	223, 288
Bagging Tomatoes	214
Banana	256
Bark-louse	208
Barrie	82
Basset Plum	286
Beans, new	18
Beans, Lima	182
Bees injuring Grapes	5, 56
Begonia Rex	11
Begonia, Prince Albert	281
Belinda Grape	10
Ben Davis Apple	93, 273
Berberis Sinensis	15
Berberis Thunbergii	15
Bessemianka Pear	272
Betula alba verrucosa	271
Bidwell Strawberry	34, 197, 224
Blackberry, The Snyder	186
Blackberry, The Taylor	189
Blackberry, Brunton's Early	2
Blackberry, The Early Harvest	2, 114, 115
Blackberry, The Early Cluster	236
Black Knot	188, 232
Black Walnut	17, 66, 83
Blanching Celery	279
Book Notices	45, 70, 95, 141, 164, 190, 239, 260, 286
Border Plants	111
Brandywine Raspberry	193
Brandy Gage	288
Brighton Grape	10, 167
Burnet Grape	31, 76, 175
Burning Coal Tar to keep off Frost	285
Butternut	83
Cabbages	115
Cabbage Worm	4, 116, 216
Cabbage, Early	63
Cabbage Beetle	110
Cabbage Butterfly	116, 216
Calla	20
California, Apricots in	191
California, Grapes in	213
California Prunes	215
Calluna vulgaris	15
Calycanthus Floridus	284
Canned Goods	137, 227, 238
Canning Oranges	145
Cardinal Flower	24
Caroline Raspberry	193
Carolina Allspice	284
Cattle in Streets	204
Celery, Large	96
Celery	59, 156, 229, 279
Champion Quince	2
Charles Downing	3
Cherries	205
Cherry Slug	60
Chestnut Oak	112
Chicago Parks	192
Chionanthus Virginica	284
Chrysanthemums, New	281
Cladastus tinctoria	230

	PAGE		PAGE
Clematis	25	Eleocarpus cyaneus	259
Clematis, Davidiana	14	Eleocarpus dentatus	260
Clematis, Coccinea	25	Empire State Grape	10
Clematis, Hybrid	140	Ensilage	163
Clematis, Jackman's	263	Erica vagano	15
Clethra alnifolia	14, 16, 152	Erica carnea	15
Clianthus, The	198	Eucharis	225
Clinton, Fruit at	34, 58	Fucharis Sanderi	281
Clover Seed Midge	112	Evaporator, improved	205
Codlin Moth	106, 123, 128, 154, 188	Experiments with Tomatoes	203
Colorado Beetle	6	Experiments in Tree Growing	242
Cumkin Peach	96	Extermination of White Grubs	123
Corn, Manuring for	100		
Cornus sanguinea	14	Fall Planting	208
Correspondence, 51, 52, 76, 105, 123, 156, 174	174	Fellenburg Plum	278
Cotton Seed Oil	209	Ferns	238
Crab Apples	211	Figs	113
Crescent Seedling Strawberry	210	Field Mouse	127
Crimson Beauty Raspberry	35	Flower Garden	139
Cultivation of Potatoes	210	Forestry Exhibition	249
Cumberland Triumph Strawberry	210	Fore-try Association of Quebec	35
Currants, Cultivation of	251	Forest Trees	189
Currant Worm .. 52, 101, 116, 160, 175, 218	218	Forest Rose Plum	286
Curl Leaf in Peach	276	Fountain Pump	156, 198
Cuthbert Raspberry	193	Franconia Raspberry	194
Cutting Seed Potatoes	37	Freesias	224
		Fruit Crop of '82	36
Dahlia	107	Fruit Culture in Russia	185
Danger to Shade Trees	176	Fruit Evaporators	66, 205
Dates	178	Fruit Growers' Association—	
Davidson's Thornless Raspberry	194	Winter Meeting	79
Decorative Tree Planting	240, 288	Summer Meeting	219
Desmodium penduliflorum	14	of Abbotsford	274
Desmodium Canadense	14	of Grimsby	127
Desirable Shrubs	284	Fruit Growing	77, 134, 184
De Soto Plum	286	Fruit Insects	233
Deutzia crenata	14	Fruit in Annapolis	174
Dicentra spectabilis	90, 155, 217	Fruit in the North	159
Doyenné d'Ete Pear	212	Fruits in England	117
Dried Apples	168	Fruits of Minnesota	173
Dried Fruit Market	200	Fruit Prospects	157
Dried Fruit	92, 119, 150, 162	Fruit, Preservation of	88
Drummond Phlox	267	Fruit Report	158
Drying Tomatoes	285	Fruit, Preparing for Market	180
Duchess Grape	10	Fruit Show	257
Dunlap Peach	48	Funkia	22
Dwarf Pear	83, 218		
		Garden, How to Make it Pay	113
Early Apples	187	Gardens at Vancouver Island	279
Early Cabbage	63	Gathering Pears	283
Early Canada Strawberry	51	Genesee Peach	48
Early Cluster Blackberry	236	Geraniums	19
Early Grapes	59, 105, 108	Girdled Apple Trees	174, 220
Early Greens	182	Giant Zittau Onion	288
Early Harvest Blackberry	2, 114, 215	Gladiolus	8
Early Peaches	137, 216, 258	Glucose Honey	6
Early Victor Grape	108	Good Place for Forest Trees	189
Easter Beurre Pear	7	Gooseberries, English	32, 81
Edinburgh Fore-try Exhibition	249	Gooseberries	251
Education, Agricultural	278	Grapes Under Glass	4

	PAGE		PAGE
Grapes.... 7, 10, 21, 27, 59, 83, 92, 95, 105, 108, 163, 278, 119, 120, 121, 140	163	Large Strawberries	199
Grapes, Ripening of.....	207	Law making.....	201
Grape Vines	183	Laying Turf in Summer	216
Grape Vines, Grafting of.....	209	Lay of the Ancient Hybridist	264
Grape Vines, Paris Green on	216	Leiophyllum buxifolium	15
Grapes, Keeping in Winter.....	223, 288	Lily of the Valley	38
Grapes, Bagging of	236	Lily, Victoria Regia	221
Grapes in Lake Erie.....	213	Lima Beans.....	182, 206
Grape-Growing in California	107	Linden Grape.....	10
Grape-Growing in Huron County	202	Little, Mr. James	247
Grape Vine Plume	194, 210	Lombard Plum	17
Gregg Raspberry	76, 163	Lost Rubies Raspberry	196
Grimsby Fruit Growers' Association	127		
		Magnolia parviflora	282
Hansell Raspberry	1, 194	Magog Red Streak Apple	172
Hardy Border Plants	111	Manitoba, Fruit Trees in.....	33
Hardy Herbaceous Plants	217	Manitoba, Fruits for.....	275
Hardy Ferns	258	Management of Grape Vine.....	207
Hardy Trees	271	Manchester Strawberry.....	196, 224
Hardy Fruits	275	Mangoes	238
Hedges of Honey Locust	44	Market Pears.....	161
Heliotrope	20, 217	Marlboro' Raspberry	40, 207
Highland Hardy Raspberry	194	Maple Egerian	176
Highland Grape	62	Maule's Pyrus.....	284
Hopkins Raspberry	194	Melon and Squash Bugs.....	283
Horse Radish.....	144	Melons, Fertilizer for	3
Horticultural Gossip.....	126	Mexico, Rubber Plant in.....	192
Horticultural Swindle	9	Mice, to Protect Trees from.....	32
House Plants.....	19	Mice girdled Trees	122
Hybrid Clematis	140	Michigan Horticultural Society.....	28
Hydrangea paniculata grandiflora	13, 255	Mississippi Valley Hort. Society.....	148, 170, 268
			266
Illustrations..... 8, 9, 11, 13, 20, 21, 39, 60, 61, 63, 65, 67, 90, 93, 98, 99, 102, 103, 104, 114, 122, 146, 147, 150, 152, 153, 176, 245	195	Mignonette.....	257
Improved Fruit Evaporator.....	283	Mimulus cupreus	173
Insects..... 48, 112, 176, 188, 202, 208, 213, 233, 235, 240, 283	256	Minnesota Fruits	244
Insecticides	192, 240, 253, 240	Mobile, Reminiscences.....	127
Insects on Roses	284	Mouse, the Field	51
Interesting Native Plant	34	Mushroom Culture	30, 275
International Exhibition		Muskoka, Fruits in	
Jackman's Clematis	263	National School of Forestry	272
James Vick Strawberry.....	169, 196, 218, 224	National Sanitary and Rural improvement Association.....	278
Japan Maples.....	282	Nepenthes Northiana	282
Jefferson Grape	2	Neviusia Alabamensis	15
		New Fruits.....	2, 210
Kalmia latifolia.....	14	Newburgh Muscat.....	10
Keeping Grapes.....	216	New Strawberries.....	108, 196, 224, 240
Kieffer's Hybrid Pear	391, 118, 160	New Plants.....	281
Kitchen Garden.....	259	New Orleans	146
		Niagara Grape	253
Lady Washington Grape.....	10	Niagara Raspberry	194
Ladies Cabbage.....	288		
Large Peach Orchards.....	191	Oak Leaved Mountain Ash.....	99
		Oak, The Chestnut	112
		Oil from Sunflower	252
		Oleanders	107
		Old Ironclad Strawberry.....	65
		Onion Maggot	235
		Onion, Giant Zittau	288

	PAGE		PAGE
Orchards, protection to.....	48	Prunus triloba	14
Orchards, large peach	191	Puget Sound Fir Tree	96
Ornamental Shrubs.....13, 14, 183,		Pyrethrum	256
191, 234, 284, 247		Pyrus Maulei	284
Ornamental Trees	97, 99, 112, 83,		
282, 271		Quince, The	215
Ornamental Berries	183	Quince Trees	162
Ostheim Cherry.....	272		
Ostrich farming.....	270	Raspberries, 193, 196, 198, 207, 210, 278, 211	
Ottawa Valley Fruit Report.....	158	Raspberries in New Jersey	237
		Raspberries in Illinois	187
Packing Apples.....	216	Recipes	72, 144, 288
Pansy, The.....	266	Red Astrachan Apple	282
Paper Bags on Grapes	120	Refrigerator Cars	203
Paris Green on Grape Vines	209	Relation of Seeds to Quality	15
Parsnips	41	Reliance Raspberry	195
Peaches for Market.....	3, 135	Remedy for Peach Yellows	274
Peaches	3, 83, 135, 137, 190	Reminiscences of Mobile.....	244
Peaches, Early	137	Report of Prof. Tanner	277
Peach Orchards	118, 191	Report on Trees	33
Peach Yellows	235, 274	Report on Fruits	57
Peach Leaf Curl	276	Report on Russian Fruits.....	142
Pear, The	175, 212, 272	Rhubarb Forcing	120
Pears Cracking	57	Ripening Grapes	163
Pears for Market	161	Roadside Tree Planting	251
Pears, Winter	185	Rollingstone Plum.....	286
Pears, Gathering of	283	Root Pruning.....	214
Peas, Experiment with.....	177	Rosa rugosa	263, 272
Peas, Preserving.....	163, 191	Rosebugs	21
Peas, Trellis for	138	Rose, The	272
Perennial Plants	247	Roses..81, 145, 227, 237, 200, 240, 263,	
Petite Marguerite Pear.....	175	272, 281	
Philadelphia Raspberry	195	Rubber Plant.....	192
Phlox Drummondii	267	Rural Improvement Association.....	278
Phylloxera	85	Russian Fruits	26
Pinus Sylvestris.....	271	Russian Mulberry	199
Piper's Seedling Strawberry	240	Russia, Fruit Culture in	185
Planting Trees in the Fall	208		
Plums	83, 272, 278, 192	Salpiglossis, The	267
Plum Trees.....	188	Salsify	93
Plum Crop.....	201	Salvias	236
Plums for high latitudes	286	Sanitary Association	278
Po'keepsie Red Grape.....	10, 94	School of Forestry	272
Poetry....24, 48, 72, 96, 120, 144, 168,		School Grounds.....	139
192, 216, 264, 288		Scions, cutting of	77
Portulaca, The	267	Scotch Pine	271
Populus alba var. erecta	271	Scraping trees.....	212
Potatoes	86, 94, 144	Seed Breeding	180
Potatoes, The Cultivation of	210	Seed Potatoes.....	37
Preventable Losses	7	Seneca Queen Strawberry	197
Prentiss Grape	121, 132, 173	Shaffers Colossal Raspberry ...	60, 195, 278
Preparing Fruit for Market.....	180	Sharpless Strawberry	190, 197, 224
Prices of Canned Goods	238	Shirts Strawberry	197
Profits of Small Fruits.....	273	Shrubs.....	14, 183, 234, 247, 284
Professor Tanner's Report	277	Singular freaks	190
Progress of Manufacture of Cotton Seed		Silverbell tree.....	191
Oil	209	Small fruits	53, 124, 190
Promising Winter Apples	202	Small trees.....	64
Pruning	77	Small seeds, how to grow	143
Pruning Raspberries.	198	Snyder Blackberry	186

	PAGE		PAGE
Soil Analysis	277	Trees, Scraping of.....	212
Solid Raspberry.....	195	Tree Agents	172
Sorghum	48 132, 179	Tree Planting	251, 288
Souhegan Raspberry	15, 195, 211	Tree Planting Act.....	125
Southern Fruit Show	257	Tree Growing.....	242
Spier Plum	286	Turner Raspberry	196
Sparrow, English	54, 59, 186	Tyler Raspberry.....	43, 196
Spirea aræfolia	14		
Spirea pruinifolia	14	Ulster Prolific Grape.....	10, 95
Spirea Thunbergii	14		
Special Fertilizers	3	Valuable Information	271
Squash, The	11	Vancouver's Island	279
Squash bugs	283	Vergennes Grape	2
Stayman's Early Blackberry.....	9	Vegetables, new	104
Styrax Japonica.....	14	Vegetables in England.....	136
Stratford	82	Vegetables	241
Standard Pears	83	Viburnum plicatum	13
Stone's Hardy Blackberry	91	Viburnum microcephalum	14
Stonewall Jackson Apple.....	273	Victoria Grape	140
Strawberry beds.....	24	Victoria Currant	155
Strawberry enemy.....	151	Victoria Regia Lily	221
Strawberay notes from Ohio	250	Vineyard, a Naboth's	215
Strawberries	49, 62, 82, 108, 169, 174, 196, 199, 204, 210, 216, 224, 240, 250	Violets.....	42
		Virginia Fringe Tree	63
Stylographic pen	94	Vladimir Cherry	272
Sugar Beet.....	7		
Sugar Maple	131	Warder, Dr. John A.....	221
Summer meeting of the Fruit Growers' Association.....	219	Wash for Trees	215
Sunflower Seed, oil from	252	Waterloo Peach	48, 190
Sunflower, Value of	190	Watermelons	138
Superb Raspberry	67, 195	Weeping Birch	271
Sweet Chestnut.....	83	Weigela rosea	14, 59
Sweet Corn, new	64	White Fringe.....	284
Sweet Corn, canning	133	White Grapes.....	121
Switzer Apple	168	White Grubs	123
		White Pine.....	84
Tanner, Prof., Report of.....	277	White Poplar.....	271
Tarnished Plant Bug	151	Wild Cucumber.....	218
Taylor Blackberry.....	189	Wilson Strawberry.....	23, 129, 174
Texas Red Hybrid Blackberry	2	Wintering Cabbage	4
Thwack Raspberry	195	Winter Pears	185
Toads	189	Winter Radishes	2
Tobacco for Cabbage Beetle	110	Wolf Plum	286
Tobacco Juice Vapor	192	Wood Ashes	96
Tomatoes	191, 203, 285	Worden Grape	81
Tonkovievka Pear	272	Wyoming Red Grape	10
Transplanting	141, 152, 255		
Trees, Best for Transplanting	69, 136	Yellow Wood	230
Trees, Planting in Fall.....	208	Yellows in Peach Trees	235, 274
		Zauschneria	284



